



Integrated Revitalization of Cultural Heritage Site of Gelati Monastery

Sub-Project Environmental Review

WORLD BANK FINANCED

REGIONAL DEVELOPMENT PROJECT 2 (RDP 2)

Environmental Screening and Classification

The subproject (SP) envisages arrangement of the light tourist infrastructure and water supply system for Gelati Monastery - UNESCO World Heritage site. Gelati Monastery is located in West Georgia, Imereti Region, some 12 km east of the city Kutaisi and 253 km west from Tbilisi. Access to the site is possible via Tbilisi-Kutaisi Highway.

SP includes:

- Construction of the visitors' center in the vicinity of Gelati monastery (Building area 286 m², Yard area 1990 m²);
- Arrangement of the parking area (980 m²);
- Arranging of 10 trade booths (area for each 2 m X 1,8 m);
- Covering of the existing retaining wall;
- Arrangement of the water supply system for Gelati Monastery, visitor center and for 15 families living in village Gelati.
- Arrangement of internal sewerage system in visitors' center and arrangement of biological waste water treatment unit.

The building of the visitors' center will be located in 50 meter distance from the monastery entry, along the access road. Visitors center will be one storey building, with total are of 286 m². Roof will be arranged with greenery, facing of the façade will be of quadrangle and rubble stone (same as Gelati monastery and Fence) columns on façade will be plastered and painted in dark gray color. Windows will be of aluminum, façade will be lightened with halogen lamps. Administration unit, information space, souvenir shop, exhibition space, room for guides, cash desk, café, administration unit, WC will be arranged in visitors center. Building will be heated by using electricity.

Building adjacent territory will be faced with granite masonry. Pedestrians will be covered with granite slabs and external lightening poles will be arranged.

Parking territory will be covered with asphalt and lightening poles will be arranged. Parking lot will accommodate 14 vehicles. At the road will be arranged street lighting pillars of 0.5 m height (16 units). The parking lot will be lit with 3 lighting pillars of 9 m height with metal-halogen lamps.

Within the scope of SP to rehabilitation of the Sokhastari source intake and bore-hole arrangement is planned for water supply purpose of Gelati monastery, visitors center and 15 families living in village Gelati.

Sokhasteri source is located in 2400 m distance from Gelati Monastery. After rehabilitation its presumable capacity will be 0.03 l/sec. At Sokhastery intake chlorination unit will be arranged with chlorinated lime in 10 m² building. Intake of the source and chlorination plant territory (190 m²) will be surrounded with wire fence.

Water from Sokhastari source will be delivered to stainless steel 50 m³ reservoir by gravity polyethylene pipe (2320 m) which will be located in 50 m distance from Gelati monastery and reservoir territory (100 m²) will be surrounded with wire fence.

Arrangement of borehole with depth of 200 m and presumable capacity 3 m³/ hr is planned within the SP. Pump designated for vertical borehole will be arranged, which will provide water to 50 m³ reservoir by polyethylene pipe. Borehole control panel will be located in 10.2 m² building and territory (150 m²) will be surrounded by wire fence.

Water will be provided from 50 m³ reservoir to monastery complex by 50 m polyethylene pipe that will end at the fence of the monastery. From this reservoir water will be provided by gravity polyethylene pipe (140m) to visitors' center and by another 125 m length pipe to stainless steel reservoir with 25 m³ capacity which will be arranged in distance of 170 m from monastery fence. Reservoir territory (64 m²) will be surrounded with wire fence. From 25 m³ capacity reservoir water will be provided to 15 families living in village Gelati by pipe with length of 670 m.

Visitors' Center's sewage services are carried out by means of corrugated polyethylene gravity sewerage pipes, precast inspection manholes are installed on them. From the sewage collector water flows into two wastewater treatment monoblock "Biotal" type plants, each with capacity of 6 m³/24 hr. After passing through the treatment block, water will flow into river Tskalstitela. Wastewater treatment units will be installed at 1715 meter distance from Gelati Monastery and the 160 m² area of their location will be fenced.

All civil works within the SP will be implemented outside Gelati Monastery World Heritage Site boundaries. Only small amount of works is scheduled inside the WHS boundaries: Small section of the Visitors' Center potable water supply pipe will be laid along the Monastery fence; Part of the pipe installed from the 50m³ reservoir to the 25 m³ will also be laid inside the boundary lines; and sidewalks inside boundaries will be covered.

Building of the visitors' center, automobile parking lot and trading kiosks will be arranged at the land plot which is registered as state ownership. The user of the land plot is LEPL National Agency for Cultural Heritage Preservation of Georgia (NACH). The Agency has transferred the land plot to the MDF under one year usage right. Currently 25.6 m² stone building with tile roof is located on this territory which is not registered in public registry agency. Building is not utilized for any purpose, dismantling is envisaged within the scope of the SP. Another stone kiosk with slate roof is located near the entrance of the monastery. Dismantling of this kiosk is not included in the SP design.

The Sokhasteri spring water intake will be arranged in the State Forest area. The water pipeline route follows the existing forest earth road and only part of it falls within the State Forest area. According to the decree of 19 December 2014, #2371 of the Government respective land plots of Tkibuli forestry (Imereti Forestry Service) with total area 455 m² was transferred for special use (in particular for construction of water supply system) to MDF without the right to cut down trees.

Land plots on which reservoirs, well and waste water treatment units will be arranged are registered as state property.

The design of the touristic infrastructure is prepared by the National Agency for Cultural Heritage Preservation of Georgia (NACH) and is agreed with UNESCO. The design for arrangement of water

supply system for the Monastery, Visitors' Center and 15 households living in the Village Gelati is approved by the National Agency for Cultural Heritage Preservation of Georgia.

(A) IMPACT IDENTIFICATION

<p>Has the subproject a tangible impact on the environment?</p>	<p>The SP has a modest negative environmental impact and is expected to have tangible long term positive impact on the social environment.</p>
<p>What are the significant beneficial and adverse environmental effects of the subproject?</p>	<p>Gelati Monastery represents UNESCO World Heritage Site (WHS). However there is no risk of impacts on historical value of the monument because all civil works within the SP will be implemented outside Gelati Monastery World Heritage Site boundaries (only a small section of potable water supply pipe will be laid inside the WHS boundary lines and sidewalk will be covered).</p> <p>Although SP will be implemented around the territory of a cultural heritage site, no interventions are planned on the structural elements of the Monastery buildings. Therefore, the risk of negative impacts on the structural integrity and historical value of the Monastery complex is minimal. As the SP is to be implemented on a CH site, there is higher than average likelihood of encountering chance-finds during excavation works.</p> <p>The design of the touristic infrastructure is simple. The proposed morphology and use of materials appear to be seamlessly integrated into the natural environment. A pedestrian zone is created which introduces visitors in a quit way in the gate area.</p> <p>Arrangements of the light touristic infrastructure will improve touristic attraction. The increased tourist flows will have positive social impact through improvement of employment opportunities. SP implementation will create opportunity for new jobs for local population and increase their incomes.</p> <p>Construction of the visitor's center of Gelati monastery will improve infrastructure for service delivery to support the development of tourism-based economy and cultural heritage circuits in the Imereti region.</p>

	<p>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; disruption of traffic and pedestrian access.</p> <p>Several components of the water supply systems (spring water intake, chlorination building, and sections of pipes) will be arranged on the forest areas with plant species included in the Red List of Georgia (2006) such as chestnut and box tree. Measures will be implemented to avoid any damage of the Red listed plants (especially roots).</p> <p>Well and reservoirs, as well as waste water treatment facility and sections of the pipes will be installed on the non forested areas. However damage of shrubs and grass vegetation is expected.</p> <p>Increased tourist flows may have indirect negative environmental impacts: waste generation, vandalism, etc.</p> <p>In operation phase proper management of generated solid waste and waste water should be ensured to reduce impact on the environment.</p>
<p>May the subproject have any significant impact on the local communities and other affected people?</p>	<p>No new land take is required.</p> <p>Implementation of the SP will have impact on 34 local vendors selling souvenirs and local products. These businesses are expected to be interrupted. RAP have been prepared to comply with relevant Georgian laws and provisions of the WB OP 4.12 on Involuntary Resettlement, as well as the updated version of the Resettlement Policy Framework of the RDP.</p> <p>The long term social impact will be beneficial (growth of tourist flow, attraction of private sector investment in tourism infrastructure (hotels, restaurants, shopping, entertainment, etc.).</p>

(B) MITIGATION MEASURES

<p>Were there any alternatives to the sub-project design considered?</p>	<p>Sitting alternatives for parking and other facilities have been considered and the optimal option selected.</p>
<p>What types of mitigation measures are proposed?</p>	<p>The expected negative impacts of the construction phase can be easily 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. Topsoil will be stripped, stored appropriately and used for reinstatement and landscaping. Impact on surface and/or underground water with chlorine-containing waste water that are expected to be formed in washing and disinfection process before launching operation of newly installed water pipes will be reduced by neutralization prior to release to the environment. Water extracted for the supply to the Monastery complex will be chlorinated for disinfection. Biological waste water treatment unit will be installed and maintained properly to avoid water pollution by newly arranged sewage system in the visitor center. Red listed trees in the vicinity of the construction activities shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided.</p> <p>In case chance find is encountered in the course of earth works, the contractor must immediately stop any physical activity on site and informs the MDF. The MDF promptly notifies the Ministry of Culture and Monument Protection, which takes over responsibility for the following course of action. Works may resume only upon receipt of written permission from the Ministry of Culture and Monument Protection.</p>
<p>What lessons from the previous similar subprojects have been incorporated into the project design?</p>	<p>The initial design of the touristic infrastructure has been amended based on the recommendations provided by Advisory Body ICOMOS International.</p>

<p>Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in subproject preparation?</p>	<p>Tkibuli population was informed about the upcoming SP in a meeting held in Tkibuli Governor's office in (06.06.2012) and generated positive reaction of the beneficiary community.</p> <p>SP specific EMP will be made available for village Gelati and Kursebi community population and will be discussed in a consultation meeting prior to the commencement of works</p>
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(C) RANKING

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)	✓	
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 4.11 Physical 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 .			

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Environmental Review and Environmental Management Plan

1. Introduction

1.1 Background Information

The Government of Georgia approved in June 25, 2010 (Government resolution no. 172), the State Strategy on Regional Development of Georgia for 2010-2017, prepared by the Ministry of Regional Development and Infrastructure (MRDI). The main objective of the strategy is to create a favorable environment for regional socio-economic development and improve living standards. These objectives will be attained through a balanced socio-economic development, increased competitiveness and increased socio-economic equalization among the regions.

In order to better utilize the tourism and agriculture potentials that exist in Imereti and reduce internal socio-economic disparities, the Government of Georgia approached the World Bank with the request to provide financial support to the regional development in Imereti. A Regional Development Project II (RDP II) was prepared jointly by the Government of Georgia and the World Bank, and World Bank provided a loan funding for the implementation of RDP II.

Sub-project (SP) for the Integrated Revitalization of Cultural Heritage Site in Gelati Monastery is a part of the RDP II 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 II.

The costs for Integrated Revitalization of Cultural Heritage Site of Gelati Monastery SP is 1 514 788,92 GEL.

Implementation arrangements: World Bank (WB) Loan Agreement with the Government of Georgia; Project Implementation Agreement between the Borrower (Georgia) and MDF for the project; Investment Financing Agreement (IFA) for the funding of the Integrated Revitalization of Cultural Heritage Site in Gelati Monastery between MDF, the Municipal Government (MG) of Tkibuli and National Agency for Cultural Heritage Preservation of Georgia.

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 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 SP 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).

The Cultural Heritage Protection Agency is responsible for the acceptance, operation and maintenance of the tourist infrastructure and water supply and sewage systems.

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, OP/BP 4.11 Physical Cultural Resources safeguard policies and OP/BP 4.12 Involuntary Resettlement of the World Bank.

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).

2. Subproject Description

The SP envisages arrangement of the light touristic infrastructure and water supply system for Gelati Monastery - UNESCO World Heritage site. Gelati Monastery is located in West Georgia, Imereti Region, some 12 km east of the city Kutaisi and 253 km west from Tbilisi. Access to the site is possible via Tbilisi-Kutaisi Highway.

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Sokhasteri source is located in 2400 m distance from Gelati Monastery. Intake of the source needs thorough cleaning and rehabilitation. After rehabilitation its presumable capacity will be 0.03 l/sec. At Sokhastery intake chlorination unit will be arranged with chlorinated lime in 10 m² building. Intake of the source and chlorination plant territory (190 m²) will be surrounded with wire fence.

Water from Sokhastari source will be delivered to stainless steel 50 m³ reservoir by gravity polyethylene pipe (2320 m) which will be located in 50 m distance from Gelati monastery and reservoir territory (100 m²) will be surrounded with wire fence.

Arrangement of borehole is planned in distance of 740 m from Geleati monastery. Depth of borehole is 200 m and presumable capacity is 3 m³/ hr. Pump designated for vertical borehole will be arranged, which will provide water to 50 m³ reservoir by polyethylene pipe. Borehole control panel will be located in 10.2 m² building and territory (150 m²) will be surrounded by wire fence.

Water will be provided from 50 m³ reservoir to monastery complex by 50 m polyethylene pipe that will end at the fence of the monastery. From this reservoir water will be provided by gravity polyethylene pipe (140m) to visitors' center and by another 125 m length pipe to stainless steel reservoir with 25 m³ capacity which will be arranged in distance of 170 m from monastery fence. Reservoir territory (64 m²) will be surrounded with wire fence. From 25 m³ capacity reservoir water will be provided to 15 families living in village Gelati by pipe with length of 670 m.

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Prior to connection to the water supply network newly installed drinking water pipelines will be washed and disinfected. This is achieved via filling and flushing the pipeline with a disinfection solution, typically chlorination. Construction works, as well as testing and disinfection of the new pipelines will be conducted in accordance with regulations currently in force in Georgia i.e. GOST and SNIP norms.

All civil works within the SP will be implemented outside Gelati Monastery World Heritage Site boundaries. Only small amount of works is scheduled inside the WHS boundaries: Small section of the Visitors' Center potable water supply pipe will be laid along the Monastery fence; Part of the pipe installed from the 50 m³ reservoir to the 25 m³ will also be laid inside the boundary lines; and sidewalks inside boundaries will be covered.

The design of the touristic infrastructure is prepared by the National Agency for Cultural Heritage Preservation of Georgia and is agreed with UNESCO. The design for arrangement of water supply system for the Monastery, Visitors' Center and 15 households living in the Village Gelati is approved by the National Agency for Cultural Heritage Preservation of Georgia.

3. Baseline Environmental Conditions

Gelati monastery is located in the Tkibuli municipality, in Kvemo Imereti. North-eastern part of the Municipality borders on Ambrolauri Municipality, Southern part – on Terjola Municipality, Eastern part – on Chiatura Municipality, Western part – on Tskaltubo Municipality. Total area of the Municipality is 470 km². It is located at 264 km distance from Tbilisi. Distance from Tkibuli to Kutaisi is 42 km.

Tkibuli municipality is located at 600-800 meter altitude above sea level. Relief is hilly. Municipality is characterized with quite humid sea climate with mild, comparatively warm winter and hot summer. Average temperature in January is 5.3°C and in August - 23.3°C. The total annual average precipitations is within 1380 mm (based on the nearest meteorological station (Kutaisi airport)).

Tkibuli Municipality is located on both riversides of the river Tkibula (right tributary of the river Kvirila). Rivers existing in the Municipality area are as follows: Lekhidari, Dzusa, Maghara-Chishura, Tskaltsitela, they belong to the river Rioni basin. River Tskaltsitela, which is the nearest one to the SP site, is the right tributary of River Kvirila. Its length is 49 km, basin area is 221 km². It mostly feeds on rain water. Average annual runoff equals 7.56 m³/sec.

In the district area there is diversity of soils: on lowlands –there is occurrence of subtropical podsollic soils of various types in vast areas (in particular – mighty and lightly podsollic, as well as crushed rock and podsollic-combined soils). Along Rioni River there is a non-carbonate alluvial soil, subtropical podsollic soil is prevailing in large area in the elevated part of the lowland; in the foothills – there are yellow soils; in the mountainous part northward there is prevalence of humus-carbonate of average and minor thickness as well as forest soils of small thickness.

The district area is a mixture of the types of humid sub-tropic plains and foothills as well as mountain-forest landscape types of humid climate. Area around the SP site is covered by mixed broadleaf forest. The forest consists of: hornbeam, beech, oak, hawthorn, in certain sections: beech, lime-tree, elms, chestnut, box-tree, cherry-laurel. Chestnut and box tree are included in the Red List of Georgia (2006). There are four walnut trees in the vicinity of the Monastery fence as well.

Areas without forests throughout the whole district are occupied with the meadows that are used for mowing-pasturing.

From mammals wolf, fox, marten, jackal, rabbits, forest mice occur in the forest area.

The Municipality is rich with coalfields, diptolitic and carbonaceous shale, chalcedonic, barite, marble, basalt and black agate deposits.

There are 48 administrative units in Tkibuli Municipality, 1 of them is the town. As of the data of 2012, 30 100 is the number of Municipality population. There are 15 600 people residing in the rural area.

The main livelihood of the population depends on the mining-field development works, agriculture, and commerce.

In Tkibuli Municipality, agricultural lands are taking up 11 700 ha area (23% of the total area). Forests are occupying a 29 183 ha area.

Village Gelati, which is located in the vicinity of Gelati Monastery, belongs to Kursebi Community. The village is located in the Okriba depression, on the left riverside of the river Tskaltsitela, at 400 m altitude above sea level. As per the year 2012 census, there are some 861 inhabitants living in the village. There is a dispensary and public school in the village, as well as the railway station of Rioni-Tkibuli line.

Gelati Monastery is the adornment of Tkibuli Municipality, which is included in the UNESCO LIST OF WORLD CULTURAL HERITAGE. There is a Motsameta Monastery complex nearby. There are also a Mukhura Waterfall and Tsutskvati Cave Natural Monuments located in the Municipality area.

Gelati Monastery - Description & brief history

The ensemble of Gelati Monastery was established by King David the Builder in 1106, with launching of the construction of the Main Church dedicated to the Nativity of the Virgin. The site consists of a group of well-preserved historical monuments dating from the early 12th and 13th centuries. These are three churches: Church of the Nativity of the Virgin, Church of St. George, and Church of St. Nicholas, as well as a bell tower and the Academy. The Monastery also includes several residential buildings dating from the 18th to the 19th centuries. The site is surrounded by a low stone wall with two porches, one in the east that is the current entrance, and another in the south that used to be the original main entrance.

The main church dedicated to the Nativity of the Virgin is located in the centre of the enclosure. To the east of it there stands a smaller building - the church of St. George; to the west - a two-storied church of St. Nicholas and an academy building behind it. To the north-west of the main church there runs a stream, above which a bell-tower is erected. These monuments form an architectural ensemble of perfect unity, its dominant being the main church. Together with the other buildings the monastery is seen as a single artistic entity.

The Monastery is important for its architecture, the mosaics, the mural paintings, as well as metalwork and enamel. The mural paintings of Gelati cover a chronological range which extends from the 12th to the 17th centuries, and it is therefore significant, as a kind of a museum of Georgian monumental painting. Gelati was not only a monastery, but also a centre of science and education. The Academy, which was founded here, was one of the most significant centers of culture in the ancient Georgia. Consequently, Gelati monastery both for its architectural merits and for the magnificent samples of Georgian culture represents a unique cultural treasury and a rare collection of excellent monuments of high artistic value, gathered in a single ensemble.

The territory of Gelati monastery is fenced within a stone enclosure. The present entrance is from the east. Originally however the road led to the south porch, where the greatest Georgian king David IV the Builder was buried. The iron gates of Ganja, brought by David's son, King Demetre I (1125-1156), in the memory of his victory, after the seizure of Ganja, are placed in the south porch. In the course of the

centuries the south porch was rebuilt more than once, being finally closed and transformed into an annex.

To the north of the main church there is a spring. In the 12th century, a stone vaulted canopy on four columns was built over the spring, in the 13th century a room was built over the vault. Upper above there is an open arched part of the bell-tower.

The Academy building was erected during the reign of David the Builder (1025-1125). This large structure is lighted through wide-arched windows. Originally the building was supplied by three entrances from the east (one of them is filled up at present). In the early 14th century, a richly decorated porch was built to the middle entrance. Originally the walls of the Academy were painted. Stone seats are arranged along the hall walls. Alongside the lectures, disputes and receptions were also held in the Academy, preconditioning the necessity of building a main entrance and lighting the hall through the wide windows, opening a view on a fascinating gorge. In Late Middle Ages, when Gelati Academy ceased functioning, the building was turned into a refectory.

4. Analysis of Potential Impacts

4.1 Construction Phase

4.1.1. Social Impacts

- **General set of social issues.** Significant social impact of construction activities, like change of local demographic structure, influx of new settlers, secondary development, job opportunities, and increase of AIDS risks is not envisaged.
- **Resettlement Issues.** SP does not imply private land acquisition and no permanent impacts are envisaged on private or leased agricultural lands. Implementation of the SP will have impact on 34 local vendors selling souvenirs and local products. These businesses are expected to be interrupted. RAP was prepared to comply with relevant Georgian laws and provisions of the WB OP 4.12 on Involuntary Resettlement, as well as the updated version of the Resettlement Policy Framework of the RDP.
- **Positive impact related to Job opportunities for construction workers.** Limited and temporary during construction and limited during operation.
- **Health issues related to noise, emissions, 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

Gelati Monastery complex represents monument of cultural heritage which belongs to the UNESCO heritage list. The SP interventions will take place outside of the Monastery and outside the lines of the Gelati Monastery World Heritage Site boundaries (only a small section of potable water supply pipe will be laid inside the WHS boundary lines). Intervention on the structural elements of the building of the

monastery is not planned. Hence the negative effects on the structural integrity of the monument and its historical value is not expected.

Accordingly, the risks of impacting the physical cultural property during construction works are marginal and related to noise, dust, vibration, and emissions from the operation of construction machinery.

In course of rehabilitation and construction activities and especially during soil excavation works, in case of observing any suspicious object, the rehabilitation works will be suspended and will restart only upon issuance of the permit by the National Agency for Cultural Heritage Preservation.

Impact of the construction activities on the monastery life of monks will be limited and temporary.

4.1.3 Environmental Impacts

Improper handling, storage, use and disposal of construction materials and wastes could pose a risk of water soil contamination at the construction site and storage site. Improper maintenance and fueling of equipment could also lead to the potential contamination of soil and to some extent – water (near the crossings of the unnamed seasonal stream). The later impact is less probable.

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-containing waste 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

Inert 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 of existing building.

Non Hazardous Construction Wastes

In summary the main non-hazardous construction wastes will include the following:

- Packaging materials;
- Metals (including scrap metal and wire) – negligible amount of metal waste is expected.

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

The following impacts may have generated:

- 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.

Flora, Fauna and Landscape

Several components of the water supply systems (spring water intake, chlorination building, and sections of pipes) will be arranged on the forest areas with plant species included in the Red List of Georgia (2006) such as chestnut and box tree. Measures will be implemented to avoid any damage of the Red listed plants (especially roots).

Well and reservoirs, as well as waste water treatment facility and sections of the pipes will be installed on the non forested areas. However damage of shrubs and grass vegetation is expected.

Not a single fauna species found in the SP area is protected by either the national legislation of Georgia or any other international agreements and treaties. Besides, the SP site is not a wintering, feeding or migrating place for the mentioned species.

The SP design does not envisage any substantial changes of landscape. The preexisting relief will be reinstated.

4.2 Operation Phase

The light tourist infrastructure to be provided at the SP sites will be transferred to the entity that owns the land under it, i.e. the National Agency for Cultural Heritage Preservation of Georgia. This entity will have overall responsibility for adequate operation and maintenance of the infrastructure, including water supply and sewage systems.

According to the Governmental decree #136, 11.08.05 underground fresh water extraction license must be obtained after completing construction/rehabilitation works of the water supply system by the National Agency for Cultural Heritage Preservation of Georgia (NACH) as responsible authority for the operation of water supply system and license conditions should be adhered to.

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 risks of chlorination of the supplied water are related to disruption of chlorination process when:

- Inappropriate transportation, storage and application of chlorination lime, it may cause damage to personnel health and chlorine content overdose in potable water;
- Interruption of chlorination process.

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. Mitigation Measures

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

5.1 Construction Phase

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 nearest municipal landfill in accordance with written agreement with the Solid Waste Management Company of Georgia Ltd. The records of waste disposal will be maintained as proof for proper management as designed.

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.

A number of restrictions and mitigation measures are to be taken into account during the construction process:

1. Application of the heavy machinery and equipment is prohibited on the monastery territory;
2. The machinery should move only along the preliminarily agreed route;
3. The maximum allowed speed will be restricted;
4. The frequency of movement of the machinery will be restricted;
5. Uncontrolled storage of hazardous wastes on the construction area is prohibited;
6. Any construction or municipal wastes produced during construction stage should remove from the site area frequently;

7. Plants included in the Red List of Georgia in the vicinity of the construction activity shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided.
8. In case chance find is encountered in the course of earth works, the contractor must immediately stop any physical activity on site and informs the MDF. The MDF promptly notifies the Ministry of Culture and Monument Protection, which takes over responsibility for the following course of action. Works may resume only upon receipt of written permission from the Ministry of Culture and Monument Protection.

Noise

Noise is one of typical impacts related to the construction activities. The compliance with the environmental requirements is even more significant for the SP area because it will involve the transportation of heavy cargo with heavy vehicles and fairly intensive traffic in the direct proximity of the historical monuments of the greatest importance.

In case of absence of special measures and disregard to the restrictions the transport and devices could inflict serious damage.

Contractor construction organization should adopt special measures to receive the appropriate construction permit and achieve agreement with all stakeholder organizations both on cargo transportation.

The following measures will be implemented for noise reducing:

- The selected movement route of the heavy vehicles should be maximally distance from historical monument;
- Allowed intensity of the vehicle traffic and speed should be determined;
- The import of the inert material shall be conducted from the licensed quarries nearby SP area. The rout of the transport movement during the transportation of inert material and any other construction material should be agreed upon with the appropriate regional services and overload with the trucks and violation of the allowed traffic intensity should not take place;
- The maximum speed should be restricted to the safety level during the pass of the trucks in the proximity of the Gelati Monastery;
- Proper technical control and maintenance practices of the machinery should be applied;
- Activities should 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.

Pollution

Water/Soil Pollution. Specific mitigation measures should be implemented at the construction site for prevention of water and soil pollution:

- Prevent operation of vehicles in the watercourses;

- Revision of vehicles will be required to ensure that there is no leakage of fuel and lubricating materials. All machinery will be maintained and operated such that all leaks and spills of materials will be minimised. Daily plant checks (Vehicle Maintenance Procedure) will be undertaken to ensure no leaks or other problems are apparent. Vehicle maintenance, cleaning, and degreasing will be undertaken in designated areas, of hard-standing, not over made ground. Maintenance points will not be located within 50m of any watercourse.
- Lubricants, fuel and solvents should be stored and used for servicing machinery exclusively in the designated sites, with adequate lining of the ground and confinement of possible operation and emergency spills. Spill containment materials (sorbents, sand, sawing, chips etc.) should be available on construction site.
- No fuel, lubricants and solvents storage or refuelling of vehicles or equipment will be allowed near the cultural heritage site.
- Contractor should be required to organize and cover material storage areas. The material storage sites should be protected from washing out during heavy rain falls and flooding through covering by impermeable materials.
- Wet cement and/or concrete will not be allowed to enter any watercourse, pond or ditch.
- Washing and disinfection of the newly laid pipelines and reservoirs

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.

Releasing of neutralized water to the environment by the contractor will be agreed with the local municipality.

The disposal of excess soil and rock

- Allow local communities to utilise any excess rock, which may be left following reuse. Suitable access to the materials will be agreed with the local authorities in consultation with the community.
- Transport any remaining material, if required, for the permanent disposal to the location authorised in writing by local authorities.

Waste Handling

Construction waste must be disposed on the nearest municipal landfill in accordance with written agreement with the Solid Waste Management Company of Georgia Ltd. The records of waste disposal will be maintained as proof for proper management as designed and submitted to the MDF.

Municipal waste may be generated on the storage area. Mainly this is rubbish, plastic or glass bottles, glasses, waste food, etc. and a stationary waste. Waste should be collected by the specially assigned

personnel on the area. The waste is placed into plastic containers should be disposed on the nearest landfill.

The personnel involved in the handling of hazardous and non-hazardous waste will undergo specific training in waste handling and storage.

Burning of waste on construction site is forbidden.

Dust and emissions

All vehicles shall be maintained so that their emissions do not cause nuisance to workers or local people. Activities will be limited to daylight working hours to reduce impacts. All vehicles will be checked and repaired in case of need to eliminate increased level of noise due to damaged parts.

Regular maintenance of diesel engines will be undertaken to ensure that emissions are minimised, for example by cleaning fuel injectors. Routine maintenance will be to a high standard to ensure that vehicles are safe and that emissions and noise are minimised. All plant used on site will be regularly maintained so as to be in good working order at all times to minimise potentially polluting exhaust emissions.

Vehicle refuelling will 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).

If deemed necessary in dry conditions or where significant quantities of dust are being or are likely to be produced mitigation measures will be arranged with the Construction Manager. Mitigation measures will include:

- Dumping down using water bowsers with spray bars or other technical means;
- Sheeting of construction materials and storage piles; and
- Use of defined haulage routes and reductions in vehicle speed where required. Materials will be transported to site in off peak hours.
- Materials and waste will be covered/ wetted down while transportation to reduce dust. The construction site will be watered as appropriate. Protective equipment will be provided to workers as necessary. All vehicles will be checked and repaired in case of need to eliminate increased emission due to damaged parts.
- 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;
- There will be no open burning of construction / waste material at the site;
- There will be no excessive idling of construction vehicles at sites.

Topsoil storage and reinstatement

Topsoil should be stripped before starting of earthworks.

The topsoil shall not be handled by construction contractor when the following conditions are observed:

- The topsoil is frozen;
- The site is experiencing persistent rainfall;
- The topsoil is saturated; or
- Handling will damage the structure of the topsoil.

Topsoil will be stored in stockpiles, no more than 2m high with side slopes at a maximum angle of 45°. The following shall also be taken into consideration:

- Dedicated storage locations will be used that prevents the stockpiles being compacted by vehicle movements or contaminated by other materials;
- Topsoil will be segregated from subsoil stockpiles;
- No material will be stored where there is a potential for flooding;
- No storage at less than 25m from river/streams, subject to the site specific topography.

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.

Stored topsoil should be used for reinstatement and landscaping. Topsoil from the sites, which will not be reinstated to the initial conditions will be distributed carefully on the surrounding area.

Subsoil Storage

The storage of subsoil in stockpiles, no more than 3m high with side slopes at a maximum angle of 60°, will take into consideration the following:

- Dedicated storage locations where the stockpiles will not be compacted by vehicle movements or contaminated by other materials; and
- Segregation from topsoil stockpiles.

Protection of adjacent landscapes and vegetation

Plants included in the Red List of Georgia in the vicinity of the construction activity, shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided.

Adverse effects on all trees within or in the vicinity of the SP site shall be minimized by the adoption of suitable mitigation measures, including, but not limited to the following (where appropriate):

- the use of matting around the root zone to prevent excess soil compaction;
- the use of paling around the trunk to prevent damage; and
- notwithstanding above, construction activities shall be controlled in the vicinity of all trees so as to minimize excessive compaction of the ground beneath the entire canopy of the tree. No heavy materials or plant shall be stored, and construction traffic movements shall be controlled, within the areas.

Any tree that is damaged or cut down without approval or dies as a consequence of the construction shall be treated or be replaced by a suitably sized transplant to the approval of the MDF.

Movement of vehicles will strictly limit within traffic lane; Pockets for turning of vehicles should be arranged. All workers will be strictly prohibited from, foraging, waste dump or other damaging activities to adjusted landscapes.

Mitigation measures for Site safety access

In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to:

- Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards;
- Alternate safe pavement will be provided for visitors.
- Construction site and all trenches should be fenced and properly secured to prevent unauthorized access (especially of children);
- Appropriate lighting and well defined safety signs 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.

5.2 Operation Phase

For proper management of the **increased volume of waste** generated due to the increased number of visitors the following measures have to implement:

- **Containers should be placed.** The number and volume of containers to be placed in the tourists gathering centers depends on the following factors: the expected number of tourists; the area of the territory, existence of access roads. Based on the calculations, for the expected 300 tourists one 1.1 m³ capacity metal container should be placed. It should be taken into consideration that the distance between containers should not exceed 50m and at the same time the 1.1 m³ containers should be easily accessible by the respective vehicles and there should be space for maneuvering. If the abovementioned requirements cannot be met, a smaller size easily portable 0.24 m³ plastic containers should be used.
- **Imposing of penalty sanctions against littering of the site.** Placement of the containers will have no tangible result, if the penalty sanctions are not imposed and exercised. The more effectively the penalty mechanism is introduced, the more accelerated will be the pace of fulfillment of the set target.

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. The Mitigation measures for this will be:

- Parking lots will be located at 60 meter distance from the monastery entry, along the access road.
- The car parking area and lots are located so that cars and buses will be able to stop and maneuver uninterruptedly;
- The proper management services will reduce negative impacts, imposed by traffic jams causing increased volumes of emissions and noise.

To ensure **safe functioning of the water supply disinfection system via chlorination** following mitigation measures will be implemented:

- Health & Safety Plan for protection of operations staff & environment will be prepared, regarding transport, storage, use, application, disposal, emergency first-aid facilities/ procedures for chlorine disinfection system;
- 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).

Noise and shouting is forbidden at the monastery territory. Shooting photos should be limited to in monasteries and especially near the wall paintings. A dress code is applied at the monastery site. Restrictions come from the patriarchate of Georgian Orthodox Church and monastery authorities. Women requested not to wear shorts or open t-shirts and to put on skirts cover head with scarf will be available for skirts and scarves provided at all entrances for free; and men are required not to cover heads with sport caps and not to wear shorts.

At the monastery to take photos monks without their permission is not allowed. There are some exceptions with prior agreement to monastery authorities.

6. Monitoring

MDF carries overall responsibility for monitoring of the implementation of the environmental mitigation measures. A consulting firm 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. Narrative reporting on the implementation of EMP will be provided on 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. Costs of Implementation

Costs of implementing the proposed individual 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 carries 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.

8. 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; In case of chance finds immediate suspension of works, notification of the Ministry of Culture and Monument Protection, and resumption of works exclusively	Construction site	Inspection	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

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?)
	upon formal consent of the Ministry.					
Sourcing of inert material	<p>Purchase of material from the existing suppliers if feasible;</p> <p>Obtaining of extraction license by the works contract and strict compliance with the license conditions;</p> <p>Terracing of the borrow area, backfilling to the exploited areas of the borrow site, and landscape harmonization;</p> <p>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.</p>	Borrowing areas	<p>Inspection of documents</p> <p>Inspection of works</p>	In the course of material extraction	<p>Limiting erosion of slopes and degradation of ecosystems and landscapes;</p> <p>Limiting erosion of river banks, water pollution with suspended particles and disruption of aquatic life.</p>	MDF, Construction supervisor
Generation of construction waste	<p>Temporary storage of construction waste in especially allocated areas;</p> <p>Timely disposal of waste to the</p>	<p>Construction site;</p> <p>Waste disposal site</p>	Inspection	Periodically during construction and upon complaints	Prevent pollution of the construction site and nearby area with solid waste	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?)
	formally designated locations					
Protection of landscape and vegetation while construction of the components of water supply and sewage systems	Marking and cordoning of the Red listed plants and large trees, Protecting of the roots of the plants.	Along the route of water supply and sewage pipes	Inspection	Periodically during construction and upon complaints	Protection of adjacent landscapes and vegetation	MDF, Construction supervisor
Washing and disinfection of the newly laid pipelines	Neutralization of disinfecting solvent prior to release to the natural environment	End points of pipelines	Inspection	In course of pipeline washing by the time of completion of their installation	Prevent environmental damage due to release of concentrated disinfectant solvents	MDF, Construction supervisor
Traffic 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 preventing congestion of access roads	At and around the construction site	Inspection	In the course of construction works	Prevent traffic accidents; Limit nuisance to local residents	MDF, Construction supervisor
Workers' health and safety	Provision of uniforms and safety gear to workers; Informing of workers and personnel on the personal safety	Construction site	Inspection	Unannounced inspections in the course of work	Limit occurrence of on-the-job accidents and emergencies	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?)
	rules and instructions for operating machinery/equipment, and strict compliance with these rules/instructions					
OPERATION PHASE						
Management of the solid waste from the visitors' center	Trash bins 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	National Agency for Cultural Heritage Preservation of Georgia (NACH)
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	National Agency for Cultural Heritage Preservation of Georgia (NACH)
						National Agency for Cultural Heritage Preservation of Georgia (NACH)
Safe functioning of the water supply disinfection system via chlorination	Health & Safety Plan for protection of operations staff & environment is prepared, regarding transportation, storage, use, application, disposal, emergency first-aid facilities/ procedures for chlorine	Potable water treatment facility	Inspection	Upon start-up of water supply system operation	Prevent environmental damage due to operational and emergency release of chlorine	National Agency for Cultural Heritage Preservation of Georgia (NACH)

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?)
	<p>disinfection system;</p> <p>Operations & Maintenance Training (upon facility start-up and 4x seasonally during guarantee period) is executed by works contractor;</p> <p>Operation Manual is supplied, training program prepared and summary report of the trainings is provided.</p>					
Maintenance and operation of the monastery complex and the visitors' center	No unauthorized construction and no informal land use in the vicinity of the historical site	Rehabilitated facilities	Inspection	During operation of facilities	Prevent loss of the historical and aesthetic values of the monument and surrounding area	National Agency for Cultural Heritage Preservation of Georgia (NACH)

Attachment 1. General Plan of the tourist infrastructure



Attachment 2. Photo illustrations



Sokhastari spring water intake

Route from the Sokhasteri water intake to reservoir





Planned location of the reservoir (50 m³)



Planned location of the reservoir (25 m³)



Planned route of the sewage pipe





Planned location of the waste water treatment facility





მ.შ.ს. ე.წ.მ.ე. ქ.თბილისი საკადასტრო სამსახური N 39.07.31.032

ამონაწერი საჯარო რეგისტრაციის

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საკუთრების განყოფილება

მინი გვებელი	სექციის კერძები	კვარტალი	ნაკვეთი	ნაკვეთის საკუთრების ტიპის საკუთრება ნაკვეთის ფუნქცია: არსასასოფლო სამეურნეო დამუშავებელი ფართობი: 5150.00 კვ.მ. ნაკვეთის წინა ნომერი
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მესაკუთრის განყოფილება

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უღებულის დამზადებელი დოკუმენტი:

- შიშართყა Nკ-2/1055 , დამოწმების თარიღი: 25/05/2012 , საქართველოს ეკონომიკისა და მდგრადი განვითარების სამინისტროს იმერეთ-რაჭა-ლეჩხუმი-ქვემო სვანეთის სახელმწიფო ქონების ადრინტეხისა და პრეაგენტის სამხარეო სამსახრის დელო

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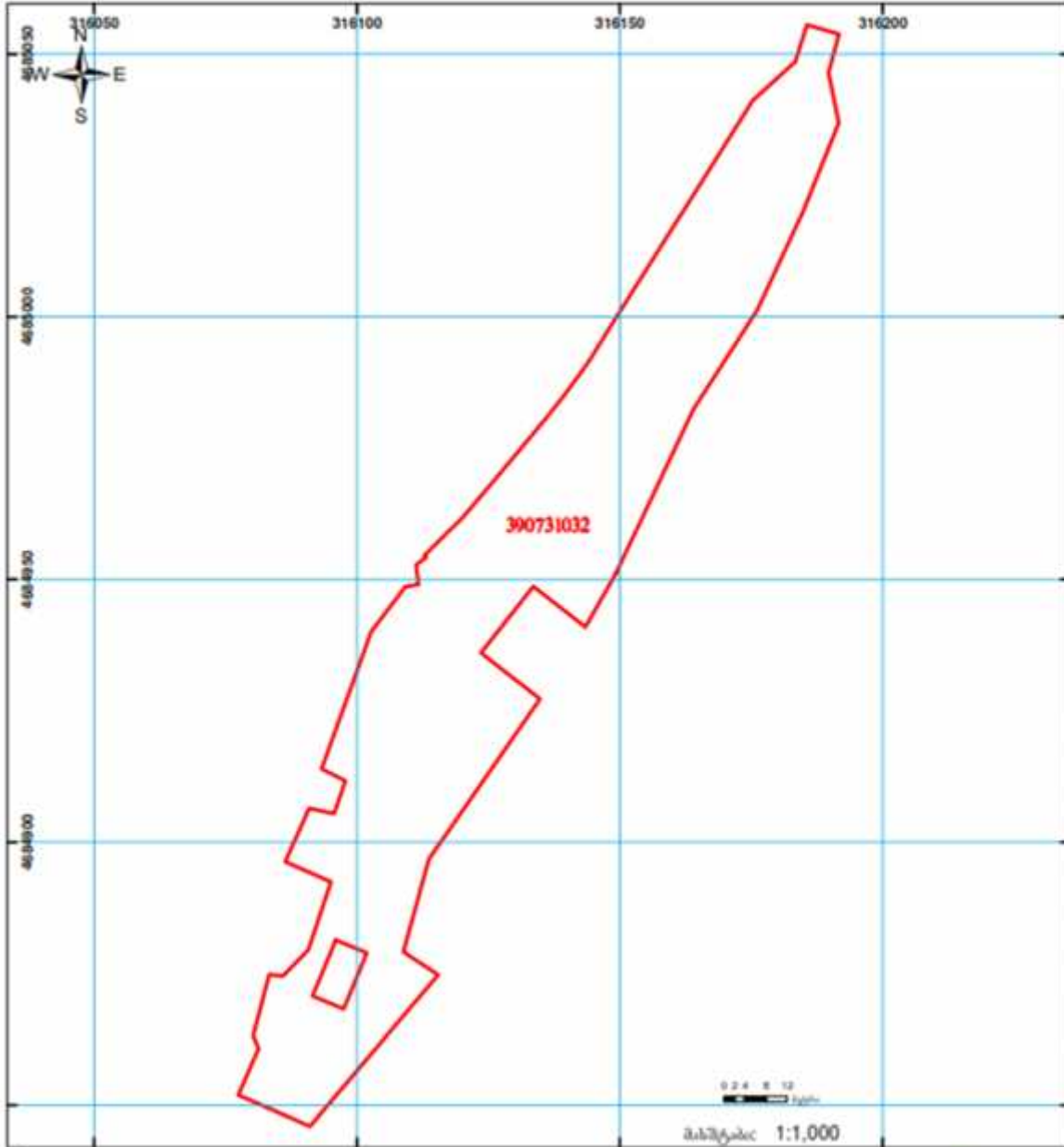
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სარგებლობა



საქართველოს იუსტიციის საბიუროს
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