Rehabilitation and Construction of Bridges in Lentekhi Municipality

Sub-Project Environmental and Social Screening

and Environmental Management Plan

WORLD BANK FINANCED
SECOND REGIONAL AND MUNICIPAL INFRASTRUCTURE DEVELOPMENT PROJECT

December, 2015

Environmental Screening

The sub-project (SP) site is located in north Georgia, Lentekhi municipality of Racha-Lechkhumi and Kvemo Svaneti region, at 350 km distance from Tbilisi.

The SP envisages:

1. Construction of the road bridge (24 m) on the river Mukhra in the Village Tvibi;
2. Arrangement of the road bridge (12 m) over the gorge on the earth road existing from the village Mami in the direction of Ediki;
3. Construction of the road bridge (24 m) over the river Chvelpi spring in the village Chvelpi;
4. Rehabilitation of the road bridge existing over the river Chonshura in the village Durashi;
5. Improvement of streets in the village Lentekhi;
6. Arrangement/rehabilitation of retaining walls on internal roads of the village Kheledi.

The following works will be implemented under the SP:

1. **Construction of the road bridge on the river Mukhra in the Village Tvibi - SP** envisages construction of the individual metal single span 24 meter length and 4,5 meter width road bridge. Riverbed width at the bridge crossing is 26-28 meters. Benchmark of bridge carriageway is – 1.015,60 m, lower benchmark of bridge span is – 1.014,56 m, and benchmark for maximal water level (with hundred year repeatability) – 1.013,50 m. Bridge abutments are placed at the edge of the riverbed. Earth accesses are arranged on both sides of the bridge. Stone gabions are arranged for protection of both abutments from water. Floor of bridge is arranged with concrete slabs and asphalt. Bridge construction does not require temporary diversion of the river.
2. **Arrangement of the road bridge from the village Mami in the direction of Ediki and rehabilitation of the motor road - SP** envisages arrangement of the metal bridge (12 m, clearance 3,5 m) over the gorge, in the beginning of the existing earth road. Benchmark of bridge carriageway is – 1.057,72 m, and benchmark for maximal water level (with hundred years repeatability) – 1.054,82 m. Abutments will be arranged on the spring slopes. Floor of bridge will be arranged with concrete slabs and asphalt surface. Bridge construction does not require spring diversion.
3. **Arrangement of the road bridge in the village Chvelpi - SP** envisages construction of the individual metal single span 24 meter length road bridge over the Chvelpi spring. **Gorge's** width at the bridge crossing is 24 m. Bottomland width is 32-34 m. Benchmark of bridge carriageway is – 1.151,98 m, and benchmark for maximal water level (with hundred year repeatability) – 1.149,58 m. The bridge axis is selected in the best way to provide for connection with roads existing on both sides of the gorge. Abutments are placed at the edge of the riverbed. Earth accesses are arranged on both sides of the bridge. Stone gabions are arranged for protection of both abutments from water. Floor of bridge is

arranged with concrete slabs and asphalt. Bridge construction does not require temporary diversion of the spring.

4. **Rehabilitation of the road bridge existing in the village Durashi -** SP envisages rehabilitation of the currently existing bridge crossing over the river Chonshura. Length of the existing bridge is 20.5 m, clearance - 4.0 m. The planned works provide for arrangement of concrete lining for the existing abutments and replacement of the floor with r/c slabs. Floor of bridge and railings will be dismantled and metal railings and guard timbers will be installed, which will be painted with enamel paint.

5. Improvement of streets in the village Lentekhi

This component of SP envisages:

- Improvement of the territory around the mineral spring located is located 500 m away from daba Lentekhi, along to rv. Laksadura. The territory is named as ``Mzhave Tskali`` and represents public place for local population and tourists. The territory is registered as state property with the area 3462 m^2. The SP envisages rehabilitation of the stone wall on the top of mineral spring, arrangement of benches and toilet (latrine), leveling of the area. The latrine will be supplied with water through the water supply system located at 100 meter distance. The latrine periodically will be cleaned by sanitation machine. Maintenance costs will be covered by the administration (Gamgeoba) of Municipality (see attached letter).
- Rehabilitation of the central concrete drainage canal (cleaning, rehabilitation of depreciated sections with concrete, arrangement of lattices) existing from the Lentekhi Municipality Gamgeoba building to the Tskhenistskali riverside;
- Arrangement of the decorative fencing in front of and at the flanks of the church (L-60 m, on the concrete base);
- Arrangement of decorative fencing (L-50+70+80 m), sidewalks (12X3.0=42.0 m^2) and speed bumps on Tamar Mepe Avenue;
- Arrangement of the drainage canal on Gogebashvili street (L-18 m);
- Arrangement of the concrete retaining wall on Khergiani street (L-12 m h-2 m);
- On Zeda Legsuri street, filling concrete sleepers with sand and arrangement of fill-up road shoulders;
- Installation of 3 video control systems in the central street of the village.

6. **Rehabilitation of lower and upper retaining walls of internal roads in the village Kheledi -** This component of the SP envisages heightening of the lowered road section by the school building in Kheledi and arrangement of the retaining wall for preventing the school yard flooding, as well as arrangement of concrete retaining walls with a wire-grid on their tops on the village's internal roads (concrete wall height - 1-2 m, total length - 507 m.) replacing the existing stone concrete or wooden fences along the private yards, which will be dismantled.

(A) IMPACT IDENTIFICATION

Has sub-project a tangible impact on the environment?	The SP has a modest negative environmental impact and is expected to have tangible long term positive impact on the social environment.
What are the significant beneficial and adverse environmental effects of sub-project?	The following adverse impacts on natural environment are anticipated at the construction phase: damage to vegetation and soil; dust and noise generated by construction works and machinery; water pollution with construction and domestic waste and run-off from construction sites; environmental pollution with generated construction and domestic waste. The SP envisages construction of 3 new bridges and rehabilitation of the old one, therefore in the process of construction works' performance there is a risk of surface water pollution. Deterioration of the quality of surface waters may be caused by improper management of waste and accidental spills of fuel/oils. During construction works near the riverbed, there may an increase of water turbidity. Increased level of risks to the employees' health and safety is due to the fact that works will be performed in the area with complex relief and climatic conditions. Rivers, where the named bridges are to be constructed are characterized by torrents, formation of torrents is always expected during downpours. This potential adverse impact may be mitigated to negligible extent or partially prevented, if appropriate mitigation and management measures are in place. Construction of the new bridges will not modify considerably or cause tangible visual changes to the existing landscape. There are no historical-cultural monuments registered in the SP adjacent areas. On the other hand, the SP will have **positive** impact on the natural environmental through reduction of the levels of dust, noise and emissions.
May the sub-project have any significant impact on the local communities and other affected people?	The SP will have a long term positive social impact through improving living and transportation conditions of the local population. It will decrease existing negative impacts on community such as dust, emissions, vibration, and noise. SP implementation will increase the safety level of the local population and visitors' conveyance, which is especially important given the complex relief, climate and high risk associated with natural calamities. Presently, due to the lack or poor quality of bridges, transportation is considerably complicated and frequently impracticable, particularly in bad weather conditions. Arrangement of retaining walls in Kheledi will decrease the risk of flooding the public school and private yards.

	Improvement of streets in Lentekhi will increase its touristic attraction. The SP will generate short-term employment opportunities for the local population. No land take and physical relocation are expected. Negative impacts are short term and limited to the construction site. They are related to the possible disturbance described above.

(B) MITIGATION MEASURES

Were there any alternatives to the sub-project design considered?	The new bridge crossings' axis are selected in the best way to provide for connection with roads existing on both sides of the gorge. The outcomes of engineering-geological and hydrological surveys were taken into consideration in the process of designing bridge crossings. Stone gabions are arranged for protection of both abutments from water. Bridge height was selected keeping in mind hydrological conditions.
What types of mitigation measures are proposed?	Mitigation measures selected for the SP will contribute to prevention or minimization of potential impact. The contractor will be responsible for the waste disposal at the permitted location, use the quarry materials from the licensed quarries only, prevent water and soil from pollution (fuel spills due to equipment failure, raw asphalt/concrete spills etc.), avoid disturbance of population (noise, dust, emissions) through proper work/supplies scheduling, traffic management, good maintenance of the construction machinery. During construction works, soil removal will be required only for arrangement of the building yard for construction of road bridges in the villages Tvibi and Chvelpi. In the area of the building site, the soil layer will be removed and stored according to the requirements specified in the Environmental Management Plan. Upon completion of construction works, the building camp will be dismantled and the area will be harmonized with the natural environment. Since the bridge rehabilitation works will take place on difficult geographical terrain, contractor will be instructed to take sufficient measures for insuring workers safety during the construction process. In Particular: For conducting bridge construction and rehabilitation works, a period will be selected, which is not characterized by high risk of torrents and mudflows. Location of machinery, vehicles and construction base in the vicinity of riverbeds will be prohibited. Only the persons, which are appropriately instructed on labor safety and environmental issues will have

	access to the site. The personnel will be equipped with PPI. A constant communication with respective entities will be in place in order to be alerted in timely manner regarding possible worsening of weather conditions. Special attention should be paid to carrying out such mitigation/preventive measures against river water pollution as restriction of disposal of any types of waste in the riverbeds, regular checking of machinery and vehicles for avoiding spillage of fuel and lubricants. Maintenance, repair, washing and degreasing of vehicles should be allowed only in specially designated areas with appropriate covering and nozzles. The storage of potentially polluting materials, refueling and maintenance of mobile plant within 50m of all riverbeds should be prohibited. Construction works should be conducted in dry weather for preventing run-off. All laborers should be strictly instructed against extraction of plant materials, waste disposal and such other actions, which may cause damage to the surrounding landscape. Contractor will be required to take due measures to ensure safety of children and teachers during the rehabilitation process and ensure that rehabilitation works will not affect school operations in Kheledi. For this purpose, construction site should be fenced and warning signs placed to avoid children's access to the site.
What lessons from the previous similar projects have been incorporated into the sub-project design?	MDF has wide experience of implementation of medium and large scale road and streets rehabilitation SPs financed by various donor organizations. Based on lessons learned from previous similar projects, design incorporates outcomes of geological and hydrological surveys. Bridges were designed considering maximum discharge rate and geological conditions.
Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in sub-project preparation?	The SP was developed as per requirement of the municipality and according to the TOR prepared by the MDF. The sites to be subjected to construction or rehabilitation under the SP were selected together with the representatives of Lentekhi Municipality. MDF and local municipality will organize consultation meeting with local population before starting rehabilitation works.

(C) RANKING

The SP has been classified as environmental Category B according to the World Bank safeguards (OP 4.01) and requires Completion of the Environmental Management Checklist for Small Construction and Rehabilitation Activities.

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 sub-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**			

Existing stone-concrete or wooden fences along the private courtyards will be dismantling and new concrete retaining walls will be arranged within the SP. Replacement of the existing fences by concrete retaining walls is agreed with all owners in written.

PART A: GENERAL PROJECT AND SITE INFORMATION

INSTITUTIONAL & ADMINISTRATIVE	
Country	Georgia
Project title	Regional and Municipal Infrastructure Development 2
Sub-Project title	Rehabilitation and Construction of Bridges in Lentekhi Municipality
Scope of site-specific activity	The SP envisages: 1. Construction of the road bridge (24 m) on the river Mukhra in the Village Tvibi; 2. Arrangement of the road bridge (12 m) over the gorge on the earth road existing from the village Mami in the direction of Ediki; 3. Construction of the road bridge (24 m) over the river Chvelpi spring in the village Chvelpi; 4. Rehabilitation of the road bridge existing over the river Chonshura in the village Durashi; 5. Improvement of streets in the village Lentekhi; 6. Arrangement/rehabilitation of retaining walls on internal roads of the village Kheledi. The following works will be implemented under the SP: **Construction of the road bridge on the river Mukhra in the Village Tvibi - SP** envisages construction of the individual metal single span 24 meter length and 4,5 meter width road bridge. Riverbed width at the bridge crossing is 26-28 meters. Benchmark of bridge carriageway is – 1.015,60 m, lower benchmark of bridge span is – 1.014,56 m, and benchmark for maximal water level (with hundred year's repeatability) – 1.013,50 m. Bridge abutments are placed at the edge of the riverbed. Earth accesses are arranged on both sides of the bridge. Stone gabions are arranged for protection of both abutments from water. Floor of bridge is arranged with concrete slabs and asphalt. Bridge construction does not require temporary diversion of the river. The bridge existing on river Mukhra will be used as a temporary structure for construction of the new bridge. The bridge will not be demolished. Movement of transport will be prohibited on the old bridge after completion of new bridge construction. **Arrangement of the road bridge from the village Mami in the direction of Ediki and rehabilitation of the motor road - SP** envisages arrangement of the metal bridge (12 m, clearance 3,5 m) over the gorge, in the beginning of the existing earth road. Benchmark of bridge

	carriageway is 1.057,72 m, and a benchmark for maximal water level (with hundred years repeatability) – 1.054,82 m. Abutments will be arranged on the spring slopes. Floor of bridge will be arranged with concrete slabs and asphalt surface. Bridge construction does not require spring diversion. **Arrangement of the road bridge in the village Chvelpi - SP** envisages construction of the individual metal single span 24 meter length road bridge over the Chvelpi spring. **Gorge's** width at the bridge crossing is 24 m. Bottomland width is 32-34 m. Benchmark of bridge carriageway is 1.151,98 m, and a benchmark for maximal water level (with hundred years repeatability) – 1.149,58 m. The bridge axis is selected in the best way to provide for connection with roads existing on both sides of the gorge. Abutments are placed at the edge of the riverbed. Earth accesses are arranged on both sides of the bridge. Stone gabions are arranged for protection of both abutments from water. Floor of bridge is arranged with concrete slabs and asphalt. Bridge construction does not require temporary diversion of the spring. **Rehabilitation of the road bridge existing in the village Durashi -** SP envisages rehabilitation of the currently existing bridge crossing over the river Chonshura. Length of the existing bridge is 20.5 m, clearance - 4.0 m. The planned works provide for arrangement of concrete lining for the existing abutments and replacement of the floor with r/c slabs. Floor of bridge and railings will be dismantled and metal railings and guard timbers will be installed, which will be painted with enamel paint. **Improvement of streets in the village Lentekhi** This component of SP envisages: - Improvement of the territory around the mineral spring located is located 500 m away from daba Lentekhi, along to rv. Laksadura. The territory is named as ``Mzhave Tskali`` and represents public place for local population and tourists. The territory is registered as state propery with the area 3462 m^2. The SP envisages rehabilitation of the stone wall on the top of mineral spring, arrangement of benches and toilet (latrine), leveling of the area. The latrine will be supplied with water through the water supply system located at 100 meter distance. The latrine periodically will be cleaned by sanitation machine. Maintenance costs will be covered by the administration (Gamgeoba) of Municipality (see attached letter).

	- Rehabilitation of the central concrete drainage canal (cleaning, rehabilitation of depreciated sections with concrete, arrangement of lattices) existing from the Lentekhi Municipality Gamgeoba building to the Tskhenistskali riverside; - Arrangement of the decorative fencing in front of and at the flanks of the church (L-60 m, on the concrete base); - Arrangement of decorative fencing (L-50+70+80 m), sidewalks (12X3.0=42.0 m^2) and speed bumps on Tamar Mepe Avenue; - Arrangement of the drainage canal on Gogebashvili street (L-18 m); - Arrangement of the concrete retaining wall on Khergiani street (L-12 m h-2 m); - On Zeda Legsuri street, filling concrete sleepers with sand and arrangement of fill-up road shoulders; - Installation of 3 video control systems in the central street of the village. **Rehabilitation of lower and upper retaining walls of internal roads in the village Kheledi -** This component of the SP envisages heightening of the lowered road section by the school building in Kheledi and arrangement of the retaining wall for preventing the school yard flooding, as well as arrangement of the concrete retaining walls with wire meshes on their tops on the village's internal roads (concrete wall height - 1-2 m, total length - 507 m.). Works include dismantling of the existing stone concrete or wooden enclosures.		
Institutional arrangements (WB)	Task Team Leader: Xiaolan Wang	Safeguards Specialist: Darejan Kapanadze	
Implementation arrangements (Borrower)	Implementing entity: Municipal Development Fund of Georgia	Works supervisor: (tbd)	Works contractor: (tbd)
SITE DESCRIPTION			
Name of institution whose premises are to be rehabilitated	Lentekhi Municipality		
Address and site location of institution whose premises are to be rehabilitated	24, Tamar Mepe street, Lentekhi		
Who owns the land? Who uses the land (formal/informal)?	Municipal property		

Description of physical and natural environment around the site	Lentekhi municipality is located in West Georgia in Racha-Lechkhumi and Kvemo Svaneti. Area consists of 1344 m^2. Including 440 m^2 agricultural lands. Territory of municipality is of medium and high mountainous relief and is surrounded with Svaneti Lechkhumi and Egriri ridges. River Tskenistskali flows on municipality territory (length- 9176 km, catchment area - 2120 m^2) and its tributaries: Kheledula, Askadula, Zeskho, Leusheri, Khopura, Mukhra, Chvepistskali and other. Region in characterized with humid climate, with cold winter and cool spring. Average air temperature - 7-9^0 C; annual precipitation exceeds 1000 mm. Snow layer lasts from November till April and its height varies from 1-3 meter. As for 2012 municipality population was 8544 persons. 90 % of population live in villages. There are 59 settlements – 1 borough and 58 village in which 7 communities are united. Main source of income are: agriculture (mainly cattle breading, also producing corn and potato). Different profile small enterprises are in municipality. **Village Tvibi** is located 15 km distance from Lentekhi, on the right side of river Tskenistkali, 1140 m above sea level. Village population consists of 29 housholds (76 people). Village Tvibi is included in Cholouri community. River Mukhra which flows in village Tvibi is the right tributary of river Tskenistkali with length of 10 km. It originates from south slope of mountain Goldashi. Rock avalanches, landslide processes are developed at river heads. Mudflow is always originated during excess precipitation. Currently bridge crossing on river Mukhura with length of 15 m is arranged on metal span covered by wood layer. Piers are assembled with concrete ties. Water reaches both bridge piers during river swell. Considering hydrological calculation, arrangement of new bridge is envisaged by the SP on the upper side of existing bridge. Where new left pier will be set against old pier and right pier will be located 25 m above existing one. Dismantling of existing bridge is not envisaged. **Village Mami** Is located on right side of river Tskenistkali, 110 m above sea level, and 16 km distance from Lentekhi. 29 households (76) reside in village. Within the frame of SP bridge has to be arranged on Laula streamlet gully, which is located at the beginning of access road to village pasture and mowing. Currently gully is washed out during rainy weather and road becomes inaccessible. Laula streamlet joins river Tskhenistkali.

	Village Chvelpi is located on the right side of river Tskhenistskali, 1120 m above sea level and 18 km distance from Lentekhi. 109 households (39 person) are residing in village. River Chvelpistskali is originating from south slope of central Caucasus at 2565 height. Valley of Rv. Chvelpistskali is of high erosion type, widened section are met (Rv. Chvelpistskali terraces and side tributaries detrital cone) population is residing on this area, all tributaries of Chvelpistskali streamlet are of downpour type and develop strong detrital cone. During excess precipitation formation of mudflows in Rv. Chvelpistskali is frequent. Currently no bridge is available on Rv. Chveplistsklai streamlet which make access to village Chvepli unavailable during rainy weather. **Village Durashi** is located on South slope of Svaneti ridge. On left side of river Cholshura (right tributary of rv. Tskhenistskali) 14 km distance from Lemtekhi. 25 housholds live in village (83 persons) bridge crossing is located 1059 m above sea level. Length of river Cholshura is 13 km. which is originated from South slopes of mountain Goldashi on height of 1945 m. Territory is divided by numerous precipices. Mudflows are formatting both in stream heads and in boards of temporary active precipices as well. Landslide areas are met on the territory. Reason of landslide activation is side erosion of river Cholshura and damping of landslide slope with atmospheric precipitation and ground water. Strong colluvium diluvium material is accumulated in river Cholshura's basin. Ravine deeply cuts mentioned sediment. During strong rain landslide movement is expressed from both sides, which results in formation of small size temporary lakes. After some period these lakes break through and strong downpour flow generates. Access road up to bridge runs between forested slopes. Hornbeam and beech is dominant among forest tress, chestnut and fir-tree are met as well. Tree or branch cut is not envisaged by the SP. **Borough Lentekhi** Is the administrative center of Lentekhi municipality, located on South slopes of Svaneti mountain ridge, along to river Tskhenistskali and its tributary Laskadula, 7560 m above sea level and 102 km distance from town Kutaisi. There are administrative cultural and educational institutions and small enterprises as well. 551 households (1439 person) live in borough Lentekhi. Objects to be rehabilitated (drainage channel, fences) are located in different areas of borough Lentekhi. Territory of "Mjave Tskali" is located 500 m away from borough Lentekhi, along to rv. Laksadura and represents meeting place for population. Along a drainage channel subject to rehabilitation and the Legsuri street,

	administrative buildings and private houses are located. Decorative fences in front of the church on King Tamar street and at houses of IDP's will be arranged within the framework of SP. **Village Kheledi** is located on left side of river Khelediuli (right tributary of Tskhenistskali river) 859 m above sea level, 7 km distance from borough Lentekhi. 162 housholds live in village (615 persons). Bearing walls will be arranged at yards under private ownership and at school as well. Currently existing rubble stone walls are amortized and yards are flooded during rain. Internal village roads will be improved due to arrangement of bearing walls.
Locations and distance for material sourcing, especially aggregates, water, stones?	Distance to the nearest licensed borrow pit from SP sites is approximately from 2 up to 5 km.
LEGISLATION	
National & local legislation & permits that apply to project activity	The SP has been classified as low risk Category B according to the World Bank policies and the ESMF. Lentekhi municipal authority approved the SP. Georgian legislation does not require any type of environmental review, approval, or permitting for the SP. Though according to the national regulatory system: (i) construction materials must be obtained from licensed providers, (ii) 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 extraction, (iii) if contractor wishes to operate own asphalt or concrete plant (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 and technical report on inventory of atmospheric air pollution stationary source agreed with Ministry of Environment and Natural Resources Protection. (iv) Permanent placement of the inert material (cut ground and sedimentary soil) generated in the course of earth works in a selected location must be approved by local (municipal) governing bodies in written; (v) Construction waste must be disposed on the nearest landfill. Copies of extraction licenses (if applicable), permits for operating asphalt/concrete plants (if applicable) and waste disposal permits

	will be attached to this EMP once the contractor is selected and mobilized to the works site. GOST and SNIP norms must be adhered.
PUBLIC CONSULTATION	
When / where the public consultation process will take /took place	EMP will be discussed with beneficiary community prior to the commencement of works.
ATTACHMENTS	
Attachment 1: Site map and pictures Attachment 2: Record on public consultation (to be provided) Attachment 3: Agreement on waste disposal (to be provided)	

PART B: SAFEGUARDS INFORMATION

ENVIRONMENTAL /SOCIAL SCREENING			
	Activity/Issue	**Status**	**Triggered Actions**
Will the site activity include/involve any of the following?	A. Building rehabilitation	■ Yes [ ] No	See Section **A** below
	B. New construction	[ ] Yes ■ No	See Section **A** below
	C. Individual wastewater treatment system	[ ] Yes ■ No	See Section **B** below
	D. Historic building(s) and districts	[ ] Yes ■ No	See Section **C** below
	E. Acquisition of land[1]	[ ] Yes ■ No	See Section **D** below
	F. Hazardous or toxic materials[2]	[ ] Yes ■ No	See Section **E** below
	G. Impacts on forests and/or protected areas	[ ] Yes ■ No	See Section **F** below
	H. Handling / management of medical waste	[ ] Yes ■ No	See Section **G** below
	I. Traffic and Pedestrian Safety	■ Yes [ ] No	See Section **H** below

[1] Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

[2] Toxic / hazardous material includes but is not limited to asbestos, toxic paints, noxious solvents, removal of lead paint, etc.

PART C: MITIGATION MEASURES

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
0. General Conditions	Notification and Worker Safety	(a) The local construction and environment inspectorates and communities have been notified of upcoming activities (b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) (c) All legally required permits have been acquired for construction and/or rehabilitation (d) The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment. (e) Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots) (f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. (g) For conducting bridge construction and rehabilitation works, a period shall be selected, which is not characterized by high risk of torrents and mudflows. (h) Location of machinery, vehicles and construction base in the vicinity of riverbeds will be prohibited. (i) Only the persons, which are appropriately instructed on labor safety and environmental issues will have access to the site. (j) A constant communication with respective entities will be in place in order to be alerted in timely manner regarding possible worsening of weather conditions. (k) Due measures must be taken to ensure safety of children and teachers during the rehabilitation works along the school yard. For this purpose, construction site should be fenced and warning signs placed to avoid children's access to the site.
A. General Rehabilitation and /or Construction Activities	Air Quality	(a) Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust (b) During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site (c) The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust (d) There will be no open burning of construction / waste material at the site (e) There will be no excessive idling of construction vehicles at sites (f) Truck loads should be confinement and protected with lining.
	Noise	(a) Construction noise will be limited to restricted times agreed to in the permit (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible (c) The machinery should move only along the preliminarily agreed route; (d) The maximum allowed speed should be restricted; (e) Proper technical control and maintenance practices of the machinery should be applied; (f) No-load operations of the vehicles and heavy machinery are not allowed. Proper mufflers will be used on machinery.
	Water Quality	(a) Contractor will 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. Appropriate erosion and sediment control measures will be established such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers;

		(b) Contractor will plan all excavations, topsoil and subsoil storage so as to reduce to a minimum any runoff; (c) 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, degreasing etc. will be undertaken in designated areas, of hard-standing, not over made ground. Maintenance points will not be located within 50m of any watercourse; (d) 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; (e) Wet cement and/or concrete will not be allowed to enter any watercourse, pond or ditch. (f) Works near the watercourses. Contractor shall ensure proper handling of paints materials, oil and lubricants to avoid any spillage of them into the water. Storage of potentially polluting materials within 50 m of watercourses is prohibited. Dumping of waste in the rivers/watercourses is prohibited.
	Waste management	(a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (c) Construction waste will be collected and disposed properly by licensed collectors (d) The records of waste disposal will be maintained as proof for proper management as designed. (e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos)
	Material supply	a) Use existing plants, quarries or borrow pits that have appropriate official approval or valid operating license. b) Obtain licenses for any new quarries and/or borrowing areas if their operation is required; c) Reinstate used sections of quarries and/or borrowing areas as extraction proceeds on or properly close quarries if extraction completed and license expired; d) Haul materials in off peak traffic hours; e) Place speed regulating, diverting, and warning signs for traffic as appropriate.
	Protection of trees and landscpae along the roads	a) Trees along the road must be protected from cutting or unintentional damage; b) Movement of vehicles will strictly limit within traffic lane; Pockets for turning of vehicles should be arranged. c) All workers will be strictly prohibited from, foraging, waste dump, fishing, hunting or other damaging activities to adjusted landscapes.
	Protection of topsoil while arrangement of construction camps	a) Topsoil should be stripped before starting of earthworks; Proper topsoil storage practice should be applied to ensure maintenance of physico-chemical and biological activity of the soil; Temporary protective silt fencing should be erected to avoid erosion (wash down); Topsoil will be stored in stockpiles, no more than 2 m high with side slopes at a maximum angle of 45^0. No storage at less than 25m from river/streams, subject to the site specific topography. b) Stored topsoil should be used for reinstatement and landscaping. c) Topsoil from the sites, which will not be reinstated to the initial conditions will be distributed carefully on the surrounding area.

		d) Topsoil will be reinstated separately from subsoil, with care taken to avoid mixing of the materials. The topsoil reinstatement will be sufficient to restore the fertile depth to the initial conditions as judged by the topsoil strip during visual observation and comparison of the reinstated site and adjacent land. When replacing the topsoil Contractor will program the works such that the areas furthest away from the stockpiles are reinstated first with reinstatement getting progressively closer to the stockpiles, thus reducing the number of vehicle movements over the reinstated topsoil. The reinstated topsoil will then be harrowed, where practical, to protect the stability and promote vegetative growth.
H Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	(a) 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 ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. ▪ To arrange speed bumps to reduce vehicle speed and appropriate signs (road narrows/mind pedestrians) in agreement with local traffic police.

PART D: MONITORING 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 consrtruction 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

Sourcing of inert material	Purchase of material from the existing suppliers if feasible; Obtaining of extraction license by the works contract and strict 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.	Borrowing areas	Inspection of documents Inspection of works	In the course of material extraction	Limiting erosion of slopes and degradation of ecosystems and landscapes; Limiting erosion of river banks, water pollution with suspended particles and disruption of aquatic life.	MDF, Construction supervisor
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
Protection of vegetation and landscape	Large tress are protected from cutting or unintentional damage.	At construction siteს	Inspection	Periodically during construction and upon complaints	Protection of adjacent landscapes and vegetation	MDF, Construction supervisor

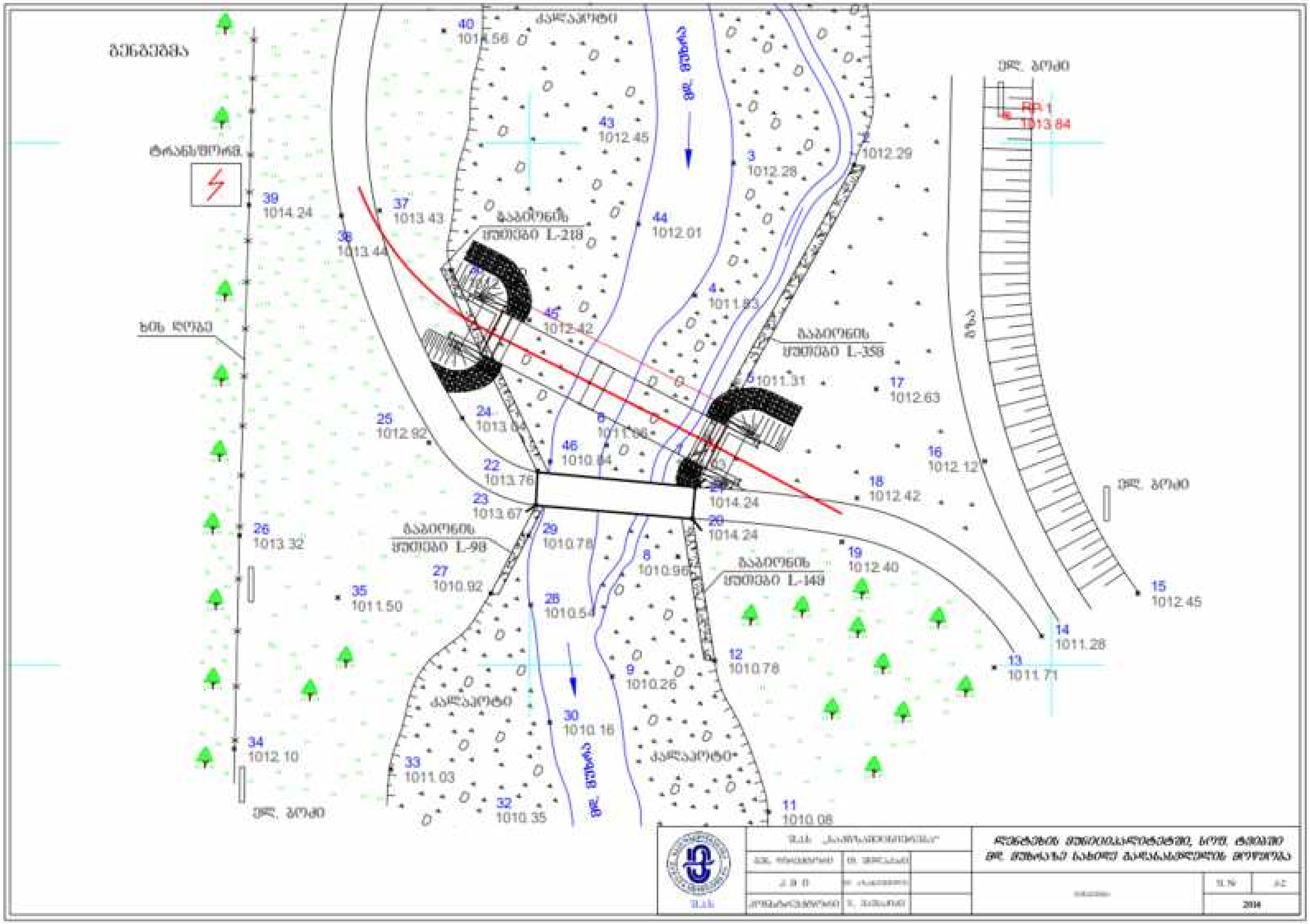
	Protected area in the immediate vicinity of the activity is not damaged or exploited.					
Works in the waterways	Prohibition of piling or dumping of construction materials and waste at the river banks; Prohibition of dumping construction or household waste into river beds; Prohibition of construction machinery and vehicles driving through / crossing river beds	At bridges	Inspection	During works on bridges	Prevent pollution of rivers and streams	MDF, Construction supervisor
Works near children's institution	Fencing of construction site and installation of warning signs; Imposing special speed limits for construction machinery and vehicles in the vicinity of the school buidling	At Kheledi school building	Inspection	During construction works at Kheledi school site	Ensure safety of school children and teachers	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 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
Completion of physical activity on the sites	Upon completion of physical activity on site, the site and contractor's camp/base is cleared of any remaining left-over from works and harmonized with surrounding landscape	Construction sites	Inspection	upon completion of civil works	Prevent pollution of the construction site and harmonize with nearby landscape	MDF, Construction supervisor
OPERATION PHASE						
Maintenance of constructed and rehabilitated bridges	Disposal of asphalt and or other waste from the repair works to the designated landfill.	Constructed and rehabilitated bridges	Inspection	During maintenance works	Prevent road accidents and disruption of traffic	Lentekhi municipality
Disruption of traffic and pedestrian access during maintenance works	Scheduling of maintenance works in at less busy hours and proper signage of maintenance area	Rehabilated sites in Lentekhi	Inspection	Throughout operation of the sites	Minimize nuisance to local residents	Lentekhi municipality
Maintenance of toilet on the ``Mzhave Tskali`` area	Proper operation of the toilet	Water course near the rehabilitated ``Mzhave Tskali`` area	Inspection	Throughout operation	Prevent pollution	Lentekhi municipality

Attachment 1. Maps and pictures

SP sites

Construction of the road bridge on the river Mukhra in the Village Tvibi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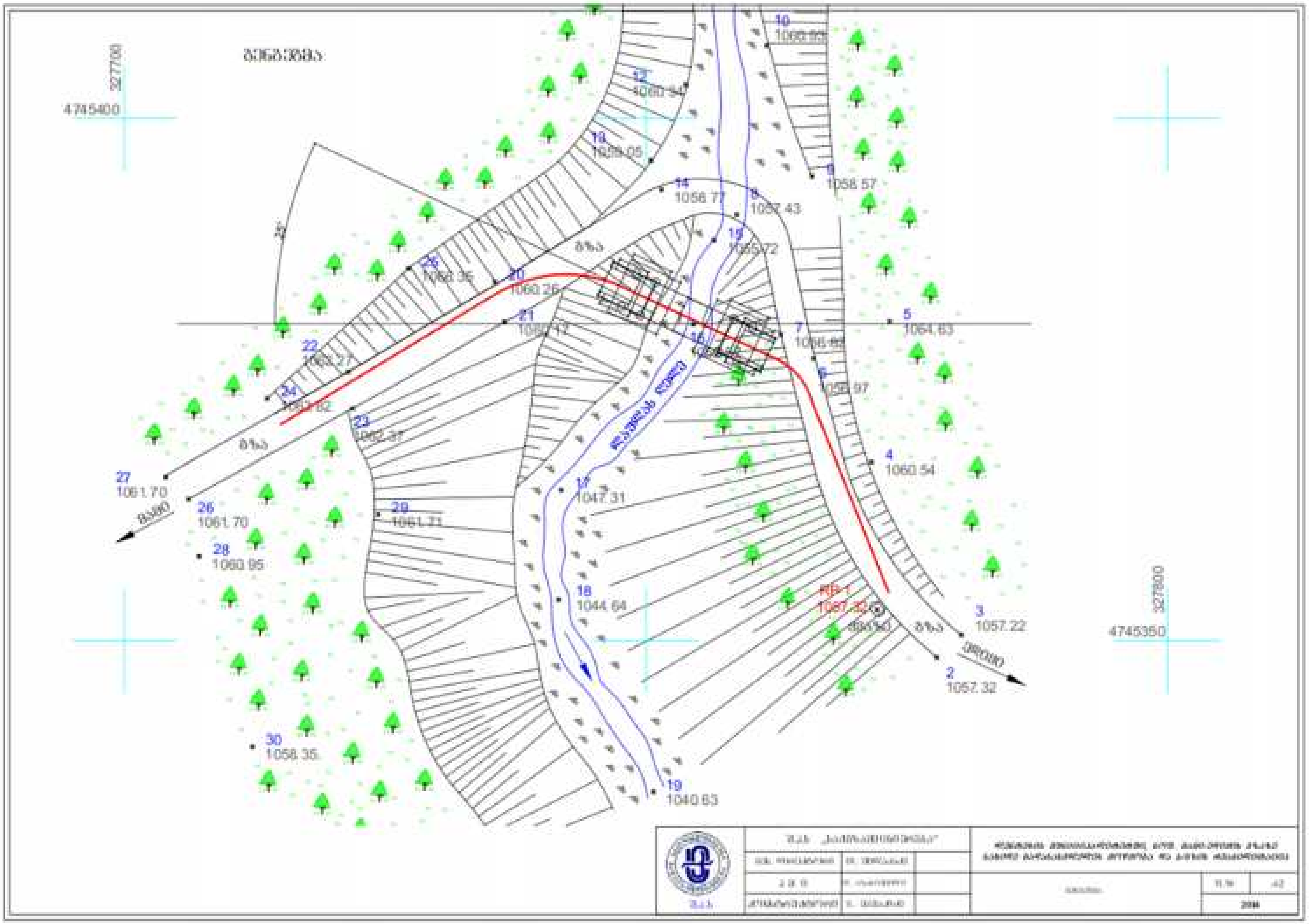
Arrangement of the road bridge (12 m) over the gorge on the earth road existing from the village Mami in the direction of Ediki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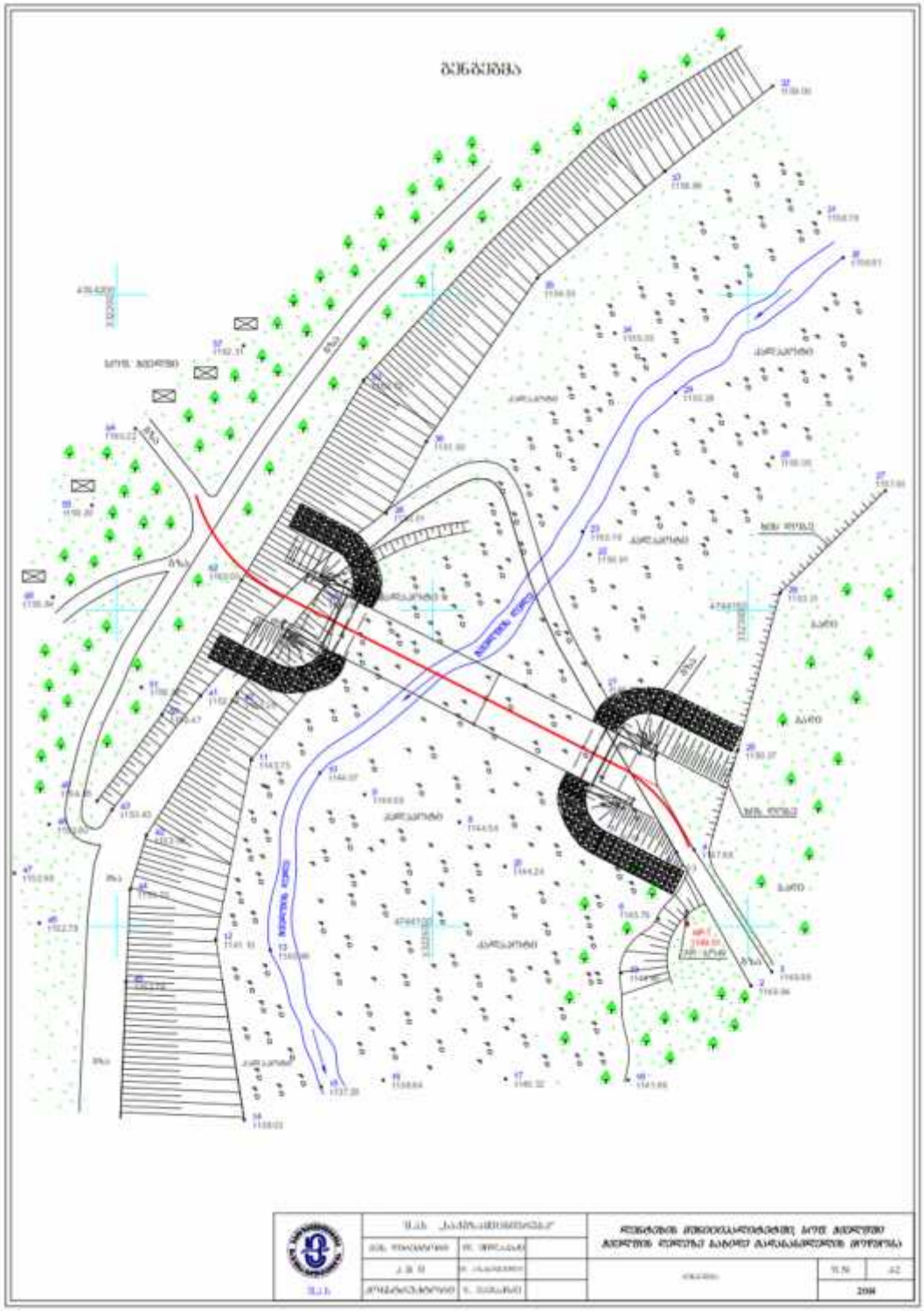
Construction of the road bridge (24 m) over the river Chvelpi spring in the village Chvelpi



Rehabilitation of the road bridge existing over the river Chonshura in the village Durashi

Improvement of Streets in Village Lentekhi

Mzhave Tskali area

Drainage canal

Existing fences on Tamar Mepe Street

Zeda Legsuri Street

Installation of retaining walls in v. Kheledi, Status Quo

Attacment 2. Cadastral Information of ```Mzhave Tskali``

N 87.04.32.103

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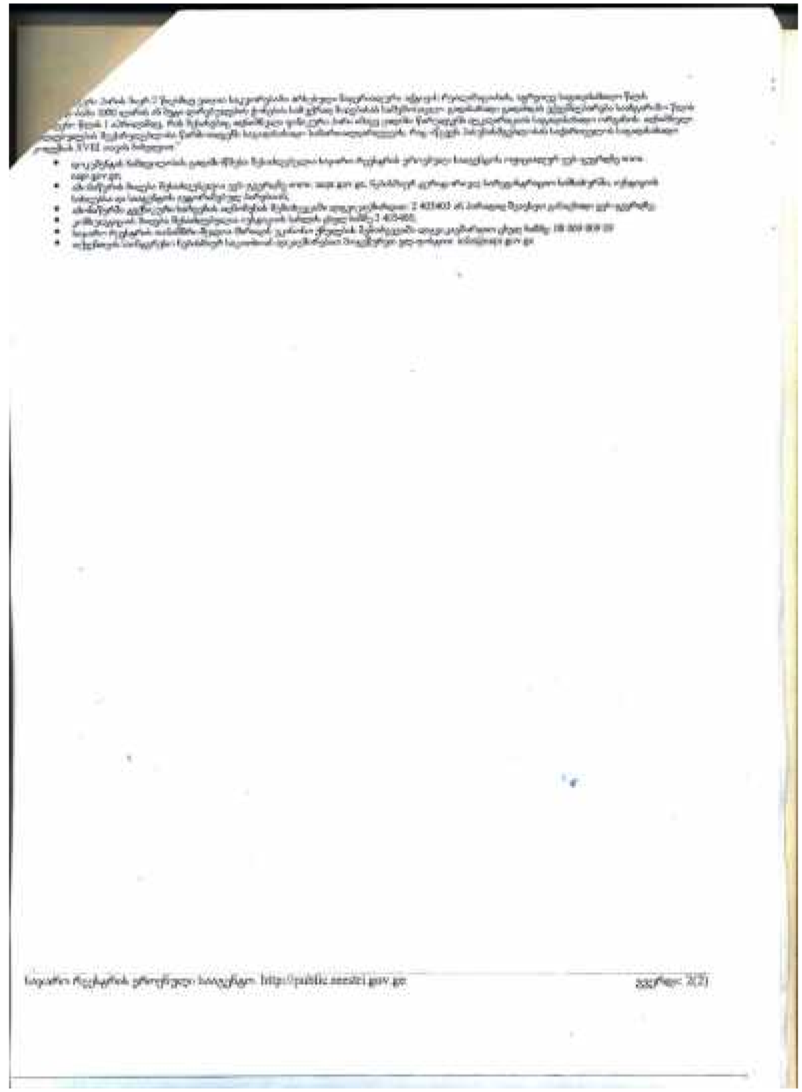

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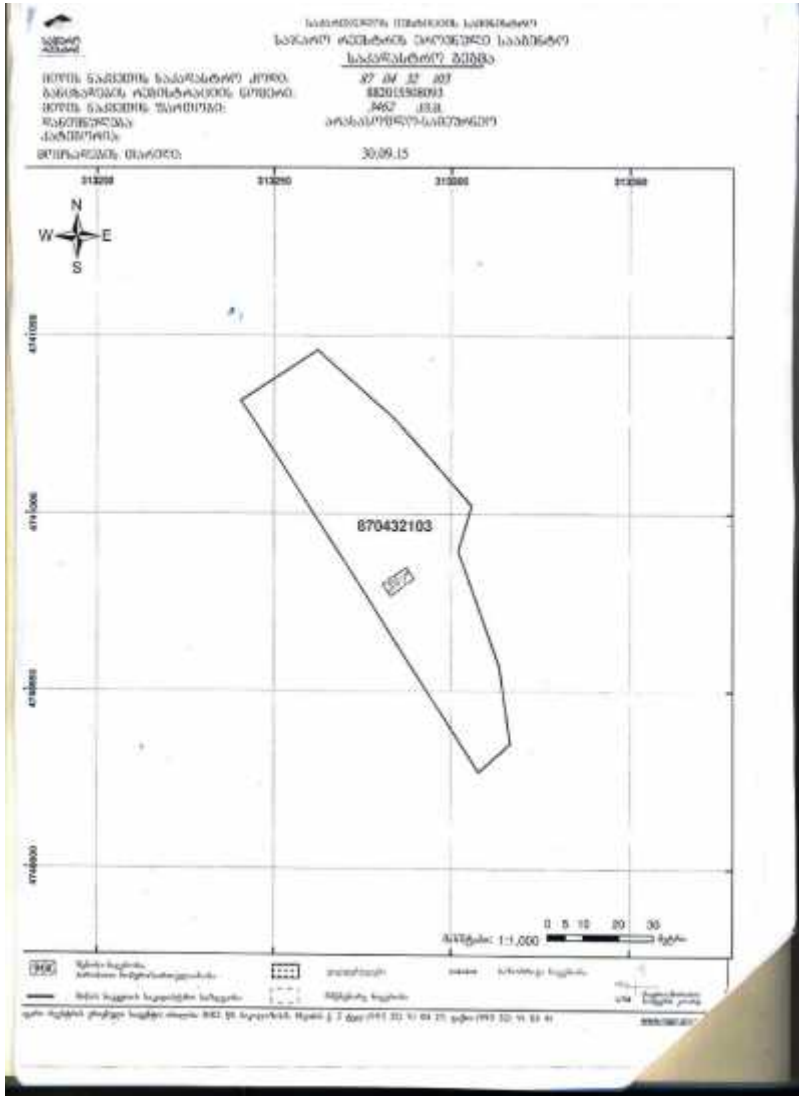
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Attachment 3: Letter from Municipality Administration of Lentekhi

საქართველო
ლენტეხის
მუნიციპალიტეტის
გამგეობა

GEORGIA
MUNICIPALITY
ADMINISTRATION OF
LENTEKHI

№-03-1175 — 2015წ

საქართველოს მუნიციპალური განვითარების
ფონდის აღმასრულებელ დირექტორს
ბატონ ჯემალ ბურჭულაძეს

ატყდნი მწვლის 5 ოქტომბრის #-2448ს წერილის პასუხად გაცნობებთ, რომ ლენტეხის მუნიციპალიტეტის „მცვე წყლის" ტერიტორიაზე სვანური კოშკი აშენებული 2009 წელს და არ წარმოადგენს კულტურული მემკვიდრეობის ძეგლს.

„მცვე წყლის" ტერიტორიაზე პროექტით გათვალისწინებული ტბაღების მერიოდულად ასუფთავების მიზნით განხორციელ თანხებს გადახდის ლენტეხის მუნიციპალიტეტი.

ამასთან ერთად გვსურს გამოვთქვათ ლენტეხის მუნიციპალიტეტის სოფელ ხალიდში მცხოვრებ იმ პირთა წერილობითი თანხმობა, რომელთა კერძო საკუთრებაში არსებულ ტერიტორიაზეც გადის გზის მონაკვეთზე მიმდინარე სამუშაოები.

დანართი _ 10 _ ფურცელზე.

პატივისცემით,

ლენტეხის მუნიციპალიტეტის

გამგებელი: ა. ჯაშურაძე

03-1175
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