DONGSUNG ENGINEERING

ROADS DEPARTMENT OF GEORGIA

MINISTRY OF REGIONAL DEVELOPMENT AND INFRASTRUCTURE

Environmental and Social Management Plan

Secondary Roads Asset Management Project

Sh16: Kutaisi-Alpana-Mamisoni pass Road (Sh16)

Rehabilitation km 78.5 – km 82

Georgia

2020

PART I: GENERAL PROJECT AND SITE INFORMATION

<table>
<tr><th colspan="4">INSTITUTIONAL & ADMINISTRATIVE</th></tr>
<tr><td>Country</td><td colspan="3">Georgia</td></tr>
<tr><td>Project title</td><td colspan="3">Rehabilitation of Kutaisi-Alpana-Mamisoni (sh16) road section from km 78.5 – km 82</td></tr>
<tr><td>Scope of project and activity</td><td colspan="3">On the basis of the results of comprehensive engineering assessment of the current state of the road network and surveying the geological and geodynamic conditions of road-section km 78.5 – km 82 of Kutaisi-Alpana-Mamisoni Road (Sh16), the relevant anti-erosion measures have been determined.

According to the project it is foreseen:

- Demolition of the deformed protective wall to the right bridge pillar caused by the deep erosion processes under the passage over the river Ghviarula and to build a new wall.
- Arrangement of protection structure – the cobble Dam with boulders of 1,0 m. at the end of the site (km80+720-km81+100), for protection from the lateral erosion of the right bank of the river Rioni</td></tr>
<tr><td>Institutional arrangements (World Bank)</td><td>Project Team Leader
Aymen A. Osman Ali</td><td colspan="2">Safeguard Supervision
Darejan Kapanadze, Environment
Sophia Georgieva, Social</td></tr>
<tr><td>Institutional arrangements (Borrower)</td><td>Project Manager
Giorgi Tsereteli,
Consultant to Roads Department</td><td>Local Counterpart Supervision
(if different from employer)
(not defined)</td><td>Contractor
(Not Defined)</td></tr>
<tr><th colspan="4">SITE DESCRIPTION</th></tr>
<tr><td>Name of site</td><td colspan="3">Kutaisi-Alpana-Mamisoni (Sh16) road section from km 78.5 – km 82</td></tr>
<tr><td>Describe site location</td><td colspan="3">The road starts at km 78.5 of Kutaisi-Alpana-Mamisoni road and ends at km 82 of the same road. The road section is located on the right slope of river Rioni valley and runs along the populated area. The first subsection of road section km 78.5 – km 82 where the rehabilitation of deformed protective wall to the right bridge pillar will be carried out, is located in the village of Gviora on the left bank of the road, on the right bank of the river Gviora. The village is located at an altitude of 760 meters, in 7 kilometers from the Ambrolauri. Village popupation is 162people (83 men, 79 Women) The second subsection, where cobble dam is to be arranged, is located in village Sadmela, on the right bank of the Rioni, at an altitude of 760 meters, 5 kilometers from the Ambrolauri. There are 529 people living in the village (men 276, women 253).

There are provided bus stops and shops adjacent to the roadbed. The areas where rehabilitation and anti-erosion works will be carried out is free from any structures/ buildings of commercial and/or residential designation.</td></tr>
<tr><td>Who owns the land?</td><td colspan="3">(i) The existing ROW is owned by Ambrolauri Municipality.
(ii) Rehabilitation works on the road will not have any negative impact on privately-owned/used land as the area around the project site is not populated</td></tr>
<tr><td>Description of geographic, physical, biological, geological, hydrographic and socio-economic context</td><td colspan="3"><u>Location:</u> The project road section starts at km 78.5 and ends at km 82 Kutaisi-Alpana-Mamisoni (Sh16) road. The road section from the beginning of the site (km78+500) at about 300 meters of distance runs on the right bank of the River Rioni. Within 300-500 meters the road runs on the right lateral apex of the range of the gorge and on the sloping hill to the River Ghviarula

<u>Geomorphology:</u> The rehabilitation sites of Kutaisi-Alhana-Mamisoni Secondary road is completely located on the right slope of river Rioni valley, except the section running through the town Oni, where it runs to the left bank. After passing through the town Oni along the lowland of Rioni floodplain 1st terrace, the road returns back to the right slope of the gorge and runs along it up to the end of rehabilitation sites. The right slope of the gorge in the road line has the variable inclination, mostly steep, in some places with rocky cliffs. It is cut with the above-mentioned and other smaller erosive ravines</td></tr>
</table>

and characterized with a hard relief. The roadbed in many places is structured in the sections of rocky slopes that is one of the reasons of its instability, because of permanent sliding of stones.

Relief: From the beginning of the site (km78+500) at about 300 meters of distance the road runs on the right III alluvial terrace of the River Rioni the sloping hill of which is located on the height of 30-40 meters from the river level. Within 300-500 meters the road runs on the right lateral apex of the range of the gorge and on the sloping hill to the River Ghviarula. Within the frames of mentioned sections the roadbed is stable and there are not mentioned any deformations. From and up to km 79+510, after the bridge passages above the River Ghviarula, the road runs on II floodplain terrace of the River Rioni. The wide surface of the terrace is located on 5-6 meters above the river level and is slightly inclined to the river.

Geological structure: Geologically the territory of the site is structured with neogenic, namely with lower and middle sarmatic (N1s1+2) marine molasse sediments that lythologically are presented with loam, sandstones, conglomerates and limestone. The road runs closer to the rocky and semi rocky slopes only on a small section from km78+800 up to km78+900 (within the frames of the apex of the lateral hill), because of which it is covered with the thick layer of the Quaternary alluvial and proalluvial genesis soil (aQIV, apQIV). Relatively from km78+900 up to the end of the site that is up to km82 the foundation of the road are presented with the above-mentioned Quaternary sediments. On these sediments, namely, on the stone-gravel soil of the River Rioni are located two bridge passages within the frames of the site on the River Ghviarula and Ritseula

Ground Waters: From the km79+500 (from the beginning of the site) up to km79+500 existence of ground waters is not revealed visually anywhere and within these frames their revealing is not expected. After km79+500 the thick layer of the River Rioni floodplain alluvial sediments contains large amount of ground waters. The River Rioni and its tributaries – the rivers Ghviarula and Ritseula are the feeders of alluvial water contain layers. That is why while performing the rehabilitation works on the damaged bridge over the river Ghviarula the large amount water flow is expected, during the excavation of the pit for the construction foundation bellow the river level. The large amount flow of water is also expected in section from km80+750 up to km81+120, where building of the bank protection construction is highly required near to the road because of active lateral erosion developing in the riverbed of Rioni (probably the gabion wall).

Geodynamic conditions and associated stabilization measures: from km78+500 (start point of the site) up to km79+500, up to the existed bridge over the river Ghviarula the road fragment runs in absolutely stable environment and here are not revealed any geodynamic phenomena or processes. The same conditions are observed after the existed bridge over the river Ghviarula from km79+550 up to km80+720, also from km81+120 up to the end of the site (km82+000), where the load is located on II upper floodplain terrace of River Rioni and the riverbed of Rioni is on a long distance from the road. Different situation is observed right at the bridge over the river Ghviarula: here, in the bed of this river is going on the active deep erosion, under the protective wall of the right pillar of the bridge at about 1.5 meters in depth the foundation is partly washed out, because of which the wall is split into two parts and its deformed. The influence of the depth erosion is obvious also in the foundation of the left pillar, where the foundation of the protective concrete wall is close to the river bed level and in the nearest future its foundation is expected to be also washed out. Following from the above-said construction of the protective wall at both pillars is highly required, the foundations of which will be no less than at a depth of 1.5 meters from the existed river bed level. At the last part of the site from km80+750 up to km81+130, the right bank of the River Rioni is under the lateral erosion, in present between the road and the river bank is left 10-15 meters. Fortification of the river bank is required in order to protect the rest part of the terrace from the river up to the road and of the road itself from erosion.

The riverbank fortification coordinates are given bellow:

The river bank protective wall to be built	Start	X -344000	Y- 4711113
	Finish	X- 344349	Y4710978

<table>
<tr><td></td><td><u>Climate:</u> According to the construction-climate zoning the territory of the road section belongs to the sub region “b” of II climate region. The average annual air temperature for the area is + 5.5^{0}C (11.2^{0}C), -3.1^{0}C (1.1^{0}C) in winter, and 15.4^{0}C (20.6^{0}C) in summer. The absolute minimum is -27^{0}C and the absolute maximum is +40^{0}C. The total amount of precipitation is 1,075 mm/year.

<u>Air</u>: Air quality in the project area is good due to low traffic levels and absence of industrial facilities.

<u>Water and Soil</u>: No pollution is reported.

<u>Flora</u>: Vegetation of the project area is composed by bushes and no tangible adverse impact is expected on the vegetative cover.

<u>Fauna</u>: The project road pass through the populated area and accordingly there are provided only some pet and livestock species, which does not need any special protecting measures. Due to the small area of the project the impact on them will be minimal.

<u>Noise:</u> Construction activities will have modest impact on people residing along this road section and this impact will be limited to the construction and periodic maintenance phases.

<u>Social/ Involuntary Resettlement</u>:

No land take is required for undertaking rehabilitation of the road section. No temporary impact on private lands, fences or other assets is expected along this road section, as works under the project will not be implemented very close to privately owned lands and assets.</td></tr>
<tr><td>Locations and distance for material sourcing, especially inert aggregates, water, stones</td><td>Information about material resources near the project road:<table><tr><td>Description</td><td>Location</td></tr><tr><td>River (Sand-gravel) Quarry</td><td>Village Chrebello, Ambrolauri Municipality</td></tr><tr><td>Balk Stones</td><td>Village Kursebi, Tkibuli Municipality</td></tr></table></td></tr>
<tr><td colspan="2">LEGISLATION</td></tr>
<tr><td>Identify national & local legislation &permits that apply to project activity</td><td>SRAMP is implemented in accordance with the World Bank's safeguard policy OP/BP 4.01 - Environmental Assessment. Based on this policy, present subproject is classified as environmental category "B". The following Plan for Environmental and Social Management is prepared according to the principles defined by OP/BP 4.01 and Environmental and Social Management Framework of SRAMP.
Under the Georgian legislation, works for road rehabilitation project does not require assessment of an environmental impact, approval or issuance of a permit/Environmental decision. However, with the national regulation system:
i) Contractor company must be licensed;
ii) Construction materials must be obtained from licensed providers,
iii) If the Contractor wants to open a quarry, an appropriate license must be obtained from the National Agency of Mines under the Ministry of Economy and Sustainable Development;
iv) If the Contractor wants to open its own plant of asphalt or concrete (or both), an environmental decision, which will cover the upper limit of pollution concentration;
v) Construction waste should be disposed at the official landfill based on the agreement with the Solid Waste Management Company or placed at the pre-selected site officially agreed with local self-government;</td></tr>
<tr><td>Grievance Redress Mechanism</td><td>A grievance redress mechanism will be available to allow project effected people appealing any action or decision on which they disagree.

The APs will be informed about the available GRM during public consultations and through distributing of brochures prior to commencement of works. In addition, an announcement with relevant information will be displayed on the information boards in the lobbies of buildings of each and every project-affected municipality. APs will be fully informed of their rights and of the procedures for addressing complaints</td></tr>
</table>

	either verbally or in writing during pre-contraction, construction and operation periods. Care will always be taken to prevent grievances rather than going through a redress process. **Mr. Giorgi Gagoshidze, Head of Spatial Arrangement and Infrastructure Department of Ambrolauri Municipality** **Mobile Phone: 595445244; e-mail: gialo.ggg@gmail.com** The Contact Person shall collect and record the grievances in a special log. If the grievance remains unsolved at the local level, it will be lodged to the RDMRDI. For any information and advice, RD nominated following persons: 1. **Mariam Begiashvili** - Social Safeguards Consultant **Mobile Phone 577 74 40 88; 555 400 205; e-mail: mbegiashvili2@gmail.com** 2. **Maya Vashakidze** – Environmental Safeguards Consultant; **Mobile Phone: 593 32 30 77 e-mail: maya_vashakidze@yahoo.co.uk** **Roads Department of RDMRDI**: 12 Kazbegi str., Tbilisi, Georgia Grievance Redress Commission (GRC) is formed by the order of the Head of RDMRDI as a permanently functional informal structure, engaging personnel of RDMRDI from all departments. This includes top management, Safeguards, Legal Departments, PR department and other relevant departments (depending on specific structure of the IA). If the RDMRDI decision fails to satisfy the aggrieved APs, they can pursue further action by submitting their case to the appropriate court of law (Rayon Court) without any reprisal.
PUBLIC CONSULTATION	
Environmental and Social Management Framework for the Secondary Road Asset Management Project was disclosed through the RDMRDI web page and the stakeholder consultation meeting was held on 14/07/2015. The present Draft ESMP will be uploaded on the RDMRDI website and the hard copies provided to Ambrolauri Municipality. Public consultation on the draft ESMP will be hold in Ambrolauri Municipality. The notification on ESMP Public Disclosure date, time and location will be made available early enough to ensure high attendance of project stakeholders. The minutes of the meeting will be attached to the final version of the ESMP.	
ATTACHMENTS	
Attachment 1: Project location map; Attachment 2: Minutes of public consultation on the draft ESMP (will be attached to this document) Attachment 3: Waste disposal agreement (to be provided by contractor); Attachment 4: Borrowing license (as applicable, to be provided by contractor); Attachment 5: Asphalt plant operation agreement (as applicable, to be provided by contractor) Attachment 6: Others	

PART II: SAFEGUARDS SCREENING AND TRIGGERS

ENVIRONMENTAL /SOCIAL SCREENING FOR SAFEGUARDS TRIGGERS			
	Activity/Issue	**Status**	**Triggered Actions**
Will the site activity include/involve any of the following?	1. Roads rehabilitation	[X] Yes [ ] No	If "Yes", see Section A
	2. New construction of small traffic infrastructure	[ ] Yes [X] No	If "Yes", see Section A
	3. Impacts on surface drainage system	[X] Yes [ ] No	If "Yes", see Section B
	4. Historic building(s) and districts	[ ] Yes [X] No	If "Yes", see Section C
	5. Acquisition of land[1]	[ ] Yes [X] No	If "Yes", see Section D
	6. Hazardous or toxic materials[2]	[ ] Yes [X] No	If "Yes", see Section E
	7. Impacts on forests and/or protected areas	[ ] Yes [X] No	If "Yes", see Section F
	8. Risk of unexploded ordinance (UXO)	[ ] Yes [X] No	If "Yes", see Section G
	9. Traffic and Pedestrian Safety	[X] Yes [ ] No	If "Yes", see Section H
	10. Impacts on land property and use	[ ] Yes [X] No	If "Yes", see Section I
	11. Social risk	[X] Yes [ ] No	If "Yes", see Section J

[1] Land acquisition includes displacement of residents, change the way of life, this is concerning with land which was purchased/handed over and impact on persons living and/or unlawfully exist and or/performing business activities (Booths) on the land already purchased.

[2] Hazardous or toxic materials contain, but is not limited to: asbestos, toxic paints, hazardous dissolvent materials, removal of lead containing materials and etc.

PART III: MITIGATION MEASURES

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
0. General Conditions	Notification and Worker Safety	a) Notify local construction and environment inspectorates and communities on the upcoming activities; b) Notify public on the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works); c) Obtain all legal permits for road construction works; d) Provide personnel with workers' personal safety equipment in compliance with international standards (should always wear helmets, masks and safety sunglasses, protective shoes); e) Post relevant warning and reminding signs with information on environmental, health and safety code of conduct in the visible locations of the work site; f) Post contact information around work site in the locations visible to local communities enabling project-affected people to raise questions and voice grievances.
A. General Rehabilitation and /or Construction Activities	Air Quality	a) Apply precautionary measures to avoid excessive dust emission during earth works and materials loading-unloading (e.g., restriction material dropping from a big height during loading-unloading); b) Keep demolition debris, excavated soil and aggregates in controlled area and sprayed with water mist to reduce debris dust; c) During pneumatic drilling or breaking of pavement and foundations, suppress dust by ongoing water spraying and/or installing dust screen enclosures at site; d) Keep free the surrounding environment (sidewalks, roads) free of soil and debris to minimize dust; e) Disallow open burning of construction/waste material at the site; f) Keep machinery in compliance with the regulations of the emission origin, proper technical repairs should be ensured, and the pitch shall be free from unnecessary construction machinery.
	Noise	a) Limit construction noise to daytime; b) Apply additional noise management arrangements in the vicinity of schools and hospitals; c) During operations, keep engine covers of generators, air compressors and other powered mechanical equipment closed, and place equipment as far away from residential areas as possible
	Water Quality	a) Establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and nearby streams and rivers.

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
	Waste management	a) Pre-identify and obtain formal permissions/agreement on the waste collection and disposal pathways and sites for all major waste types expected from excavation, demolition and construction activities; b) Separate mineral garbage / wastes remaining for construction and dismantling from general, organic, liquid and chemical waste and to be sorted in containers; c) Dispose all types of waste strictly according the existing formal agreements and exclusively to the designated locations; d) Reuse and recycle non-toxic wastes to the extent possible.
B. Impacts on surface drainage system	Water Quality	a) Do not undertake uncontrolled extraction of groundwater, nor uncontrolled discharge of wastewater, cement slurry, or other polluted waters into surface water bodies or natural environment in general; obtain necessary licenses and permits for water extraction and regulated discharge prior to commencement of activity; b) Install and operate proper storm water drainage systems; ensure that they do not fill up with silt, do not pollute, block or otherwise negatively impact natural streams, rivers, ponds and lakes; c) Introduce and follow procedures for prevention of and response to accidental spills of fuels, lubricants and other toxic or noxious substances; d) Wash construction vehicles and machinery only in designated areas where runoff will not pollute natural surface water bodies.
C. Historic building(s)	Cultural Heritage	a) In case the construction is carried out near historical buildings or in the historical area, the notification and acceptance / consent from local government organs shall be taken. All types of construction work should be planned and implemented in accordance with local and national legislation. b) In case of land excavation or findings of ancient times or other possible archaeological items, it is necessary to record and register the facts of responsible official agencies and to suspend or reverse the works by taking into consideration circumstances.
D. Acquisition of land	Land Acquisition Plan/Framework	a) If land take is required for undertaking works in a given site, do not enter this site until receipt of a formal notice from the Employer on the completion of resettlement and payment of compensations. Works are authorized after approval of the resettlement completion report by the Employer and the World Bank; b) In case of public complaints on incomplete or improper resettlement/compensation, take all activity on hold, enter complaints into log book and immediately inform the Employer. Do not resume works until formal notice from the Employer.
E. Toxic materials	Asbestos management	a) If asbestos is located on the project site, it shall be marked clearly as hazardous material b) When possible of asbestos will be appropriately contained and sealed to minimize exposure

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
		c) Asbestos prior to removal (If necessary) will be treated with a wetting agent to minimize asbestos dust d) Asbestos will be handed and disposed by skilled & experienced professionals e) If asbestos material is stored temporarily, the waste should be securely enclosed inside closed container and marked appropriately. Security measures will be taken against unauthorized removal from the site. f) Removal of asbestos will not be reused
	Toxic / hazardous waste management	a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information b) Containers of hazardous substances shall be placed in a leak-proof container to prevent spillage c) Waste shall be transported by specially licensed carriers and disposed in licensed facility d) Paints with toxic ingredients or solvents or lead-based paints will not be used
F. Affected forests, wetlands and/or protected areas	Ecosystem protection	a) (A) It is inadmissible to carry out works on the territories belonging to the State Forest Fund until the completion of the removal procedure b) Cutting of trees should be minimized, through the regulation of access roads, as well as by using of small capacity equipment and manual works. c) All trees that have to be extracted must be marked and their removal must be entered into tree-cutting ledger on daily basis
G. Risk of unexploded ordinance (UXO)	Hazard to human health and safety	a) Before to start any excavation activities, Contractor shall verify that the construction area has been checked and cleared regarding UXO by appropriate authorities
H. Traffic and pedestrian safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	In compliance with national regulations, ensure that the construction site is properly secured, and construction related traffic regulated. This includes but is not limited to: a) Use signposting, warning signs, barriers and traffic diversions so that the work site is clearly visible, and the public warned of all potential hazards; b) Apply traffic management system and train staff, especially for site access and near-site heavy traffic; provide safe passages and crossings for pedestrians where construction traffic interferes; c) Adjust working hours to local traffic patterns, avoid major transport activities during rush hours or times of livestock movement; d) If required, undertake active traffic management by trained and visible staff at the site for safe passage for the public; e) If school children are in the vicinity, include traffic safety personnel to direct traffic during school hours; f) Ensure safe and continuous access to all adjacent office facilities, shops and residences during construction.

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
I. Impacts on land property and use	Limited/lost access to the land	a) Ensure provision of undisturbed and safe access to homes, lands and other assets of the local population; b) Plan road works to maintain undisturbed access to land and assets of the local population by planning and implementing works and activities in coordination with residents and representatives of the local community.
	Temporary impact on privately-owned assets	a) Avoid trespassing or incidentally damaging of private property (using small-size machinery or manual labor near walls and fences, stockpiling of construction material and waste away from private property; etc.); b) In case of unintended damage to private property, quickly restore it to the original or better status; c) In case of expected temporary impact on privately-owned property, inform owners upfront and guarantee restoration, acquire written consent of owners for intervention, and promptly restore the damage to the original or better status; d) If an unexpected need for land take emerges in the couse of works, do not enter the affected site prior to development and full implementation of the Resettlemet Action Plan by RD
	Loss of income or assets caused by unauthorized intervention, occupation of territory outside of ROW	a) Avoid unauthorized intervention of territory outside of ROW; b) If such impact occurs by negligence of the construction company workers, record the case/claim; assess the loss and negotiate with an affected owner based on the adopted principles and valuation methodology described in the RAP and provide fair cash compensation at the Company's own cost; c) Apply GRM procedures if the case is unresolved through negotiation.
J. Social Impact	Public relationship management	a) Assign local liaison person who is in charge of communication with and receiving requests/ complaints from local population; b) Consulted local communities to identify and pro-proactively manage potential conflicts between an external workforce and local people; c) Raise local community awareness about sexually disease risks associated with the presence of an external workforce and include local communities in awareness activities; d) Inform population about construction and work schedules, interruption of the services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate; e) Limit construction activities at night. When necessary, carefully schedule night-time works and inform affected community so they can take necessary measures;

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
		f) At least five days in advance of any service interruption (including water, electricity, telephone, bus routes), advice affected community through postings at the project site, at bus stops, and in affected homes/businesses.
	Labor management	a) To the extent possible, locate work camps away from local communities; b) Undertake sitting and operation of worker camps in consultation with neighboring communities; c) Recruit unskilled or semi-skilled workers from local communities to the extent possible. Where and when feasible, provide worker skills training to enhance participation of local people; d) Provide adequate lavatory facilities (toilets and washing areas) in the work site with adequate supplies of hot and cold running water, soap, and hand drying devices. Provide separate WC facilities where male and female workers are employed. Establish temporary septic tanks for any residential labor camp and without causing pollution of nearby watercourses; e) Raise awareness of workers on overall relationship management with local population. Establish the code of conduct in line with international practice, ensure that all workers are aware of it, have read and signed off the code of conduct, and strictly enforce it, including the dismissal of workers and financial penalties of adequate scale; f) Ensure availability of grievance mechanism for workers on labor-related issues.

PART IV: MONITORING PLAN

CONSTRUCTION PHASE

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?)
Supply with construction materials	Purchase of construction materials from the officially registered suppliers	In the supplier's office or warehouse	Verification of documents and quality	During conclusion of the supply contracts	Ensure technical reliability and safety of infrastructure	RD
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 materials and construction waste transportation routes	Inspection of nearby sites roads with directions of movement routes	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.	RD Traffic Police
Operation of construction machinery on site	Proper condition of Construction equipment: - surplus emissions - Fuel-lubricant - Working hours security - Damage of Tree plant if it is not considered for the road construction	Construction Sites	Inspection of the works	In and after working hours	Reduce the air and soil contamination during equipment operation; Limit the disturbance of the population with noise and vibration	RD

Activity	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
Servicing of construction machinery	Washing vehicles and machinery off-site of in the location sufficiently distant from water bodies; Servicing vehicles and machinery with oils and lubricants off-site or in an especially arranged location on-site; Technical adequacy of the servicing location: • solid, insulating floor or adsorbent layer (sand, gravel, membrane), • containment barriers allowing enough sapce for holding fuel over the maximum amount expected on the location at a time, • emergency fire-fighting kit, sedimentation pool at car wash area.	Construction site and construction base (if applicable)	Inspection	Entire period of machinery operation	Avoid land and water pollution with oil products due to servicing of vehicles and machinery; Be ready for fire emergency action to promptly localize fire source and minimize material damage	RD

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?)
Purchasing of natural construction materials	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. Marking of the Quarries with warning signs	Quarries	Checking of documents Inspection	During extraction of materials	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; Protection of cattle and population from damage.	RD LEPL National Agency of Mines under the Ministry of Economy and Sustainable Development of Georgia
Generation of construction waste	Temporary storage of construction waste in especially allocated areas; Timely disposal of waste to the formally designated locations Delivery of hazardous wastes for companies with disabilities and disposal licenses	Construction site; Waste disposal site; Proper territories assigned for the waste disposal.	Visual Inspection and inspection of Documentation	During whole construction period	Prevent pollution of the construction site and nearby area with solid waste	RD

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?)
Accumulation of household waste	Placement of containers to collect household waste on construction site (if exist); Agreement with local municipalities regarding the regular disposal of household waste	construction site (if exist);	Visual Inspection	During whole construction period	To avoid pollution of soil and water with domestic waste.	RD
Generation of liquid waste	Arrangement of a toilets matching the sanitary norms on the construction site (if exist); Arrangement and periodic cleaning of the drainage system for the collection and flow of rain water from the construction site; Construction of Sedimentation Basin for water used for household and equipment	construction site (if exist);	Visual Inspection	During whole construction period Frequently In case of strong sedimentation	Prevent the flooding of the construction site and to hinder the activity; Minimize surface and groundwater contamination	RD
Operation of asphalt-concrete plant	Obtaining of environmental conclusion and adherence to its conditions; Selection of such a place to install the plant that ensures minimal disturbance of the population by noise, dust and emissions; Arrangement of several sedimentation basins for the water outflowing from the factory.	Plant Territory	Visual Inspection and inspection of Documentation	During installation and operation period of the plant.	Minimize disturbance of the local population near the construction site; Minimize air, surface and ground water contamination	RD LEPL National Environment Agency of the Ministry of Environment Protection and Agriculture

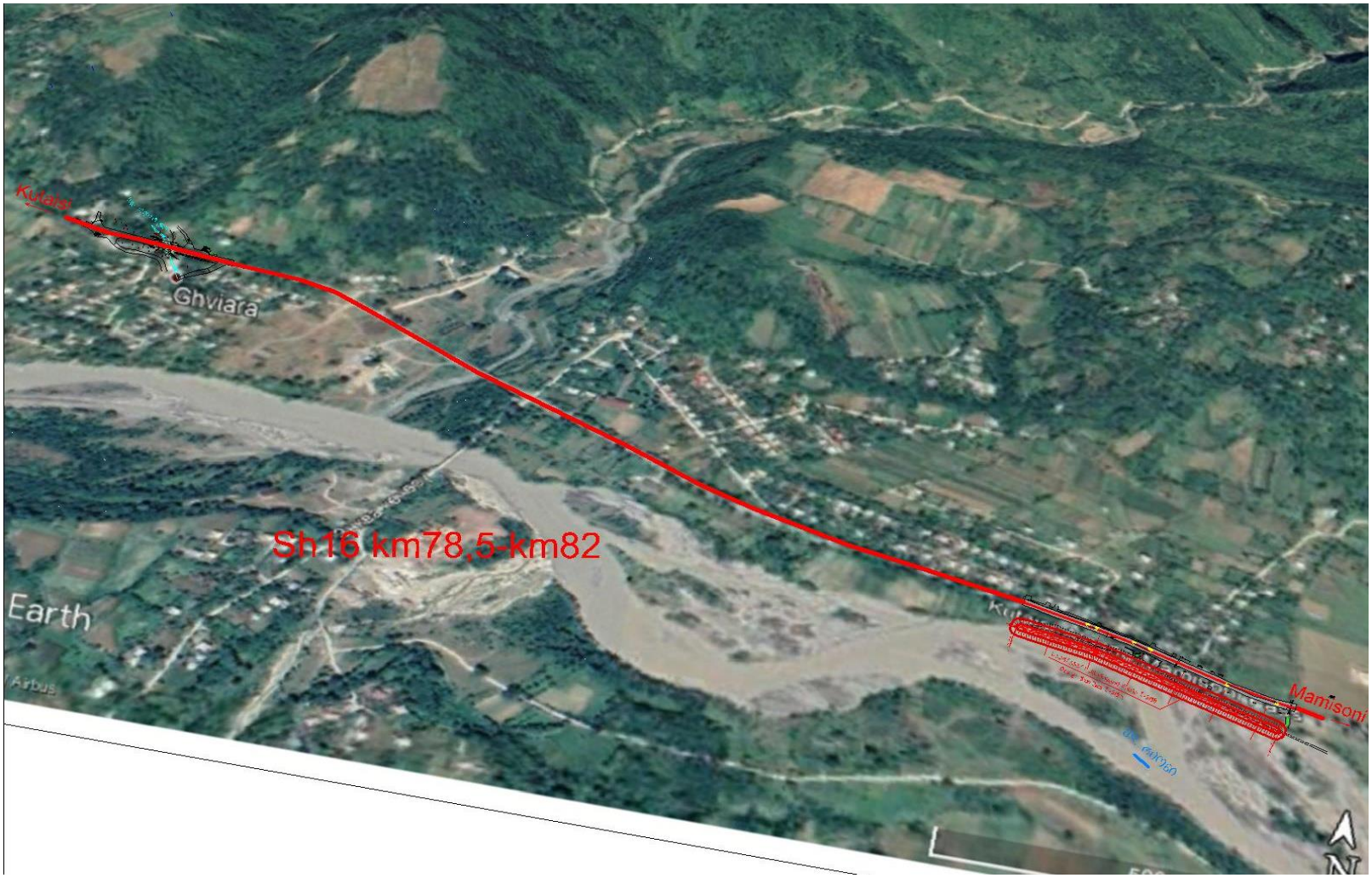
Activity	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
Safety of labor	Provision of uniforms and personal protective gear to workers and enforcement of their use; Consistency with the rules of exploitation of the construction equipment and machinery; Presence and use of viable GRM for construction contractor's personnel; Maintenance of adequate sanitary conditions at work bases/sites, including provision of separate WCs if both men and women are employed.	Construction site	Inspection of the activities	Entire period of construction	Reduce the probability of accidents	RD

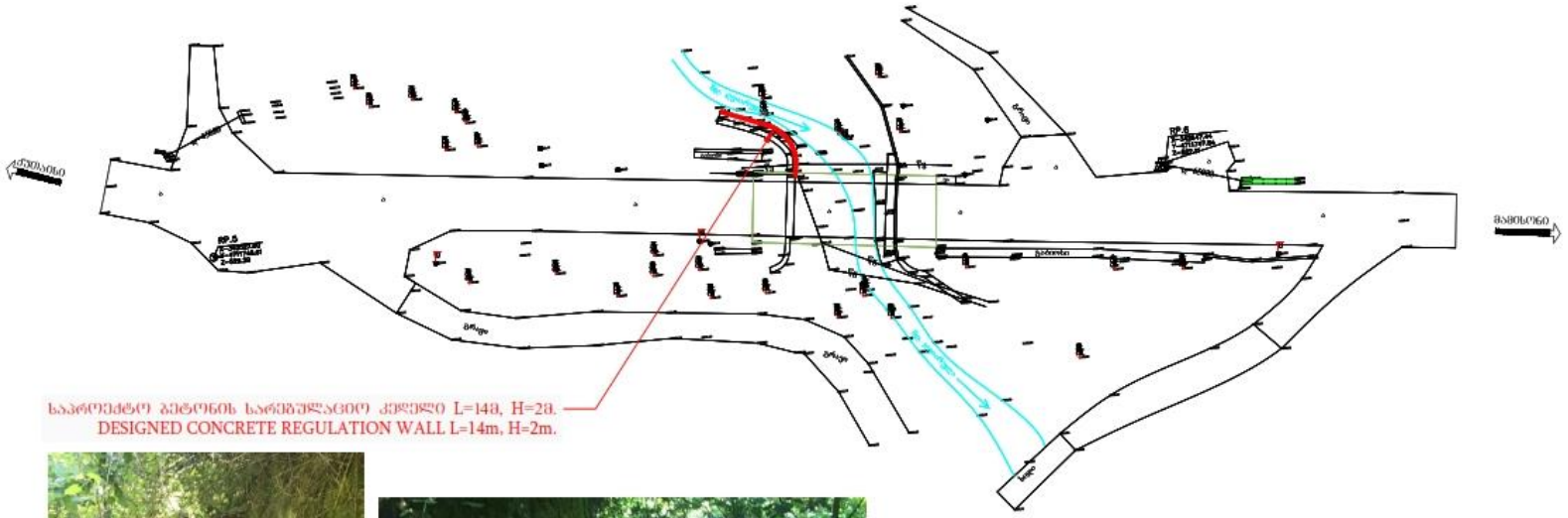
OPERATION PHASE

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?)
Maintenance of the road carriageway and shoulders Maintenance of arranged hydro technical structures	Regular collection and disposal of waste from rehabilitation works Regular collection and disposal of domestic waste left by passengers and driver; The timely removal of animal wastes on the road	Adjacent territories of the road and side ditches	Inspection	Quarterly	For the protection of the nature. In order to ensure safe movement of the traffic To maintain drainage system To prevent flooding of the road and avoid water damage	RD
Addressing accidental spillage on the road	Timely localization, collection, decontamination and disposal of waste or emitted liquid or loose cargo waste during a road accident	On the road and on the adjacent territories	Checking	During the road accidents, according to the necessity	To prevent the contamination of the nature	RD Patrol Police

ATTACHMENT 1: PROJECT LOCATION MAP

Sh -17: Rehabilitation Road Section: km 78.5 – km 82





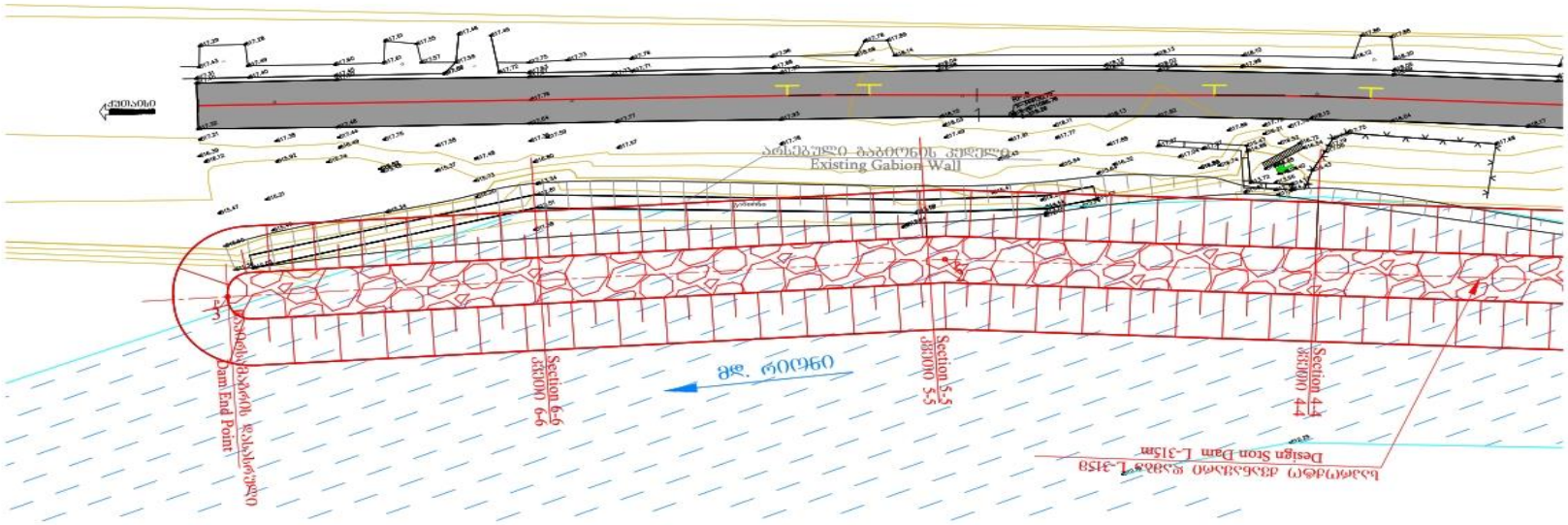
Start Point დასაწყისი	End Point დასასრული
X - 342592.672	X - 342601.161
Y - 4711760.434	Y - 4711751.349

DONGSUNG ENGINEERING

ALPANA

ONI

P	East	North	Elevation
1	344315.985	4710977.009	517.67
2	344314.383	4711069.886	515.47
3	344027.104	4711099.864	514.50



DONGSUNG ENGINEERING

ALPANA

ONI

P	[illegible]	[illegible]	[illegible]
1	344315.985	4710977.009	517.67
2	344114.383	4711069.886	515.47
3	344027.104	4711099.864	514.50