



**ROADS DEPARTMENT OF  
THE MINISTRY OF REGIONAL DEVELOPMENT AND INFRASTRUCTURE OF  
GEORGIA**

**Supplemental Environmental and Social Impact Assessment for  
construction works of local road at pk0+75 - pk35+11 right and left side,  
pk35+22 – pk68+53 right side and pk36+91 – pk68+50 left side  
of the E-60 East-West Highway of Ruisi-Agara-Agara Bypass section  
(km95 to km114)**

**December 2015**

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# 1. Introduction

## 1.1. Background

This Supplemental Environmental and Social Impact Assessment (ESIA) was carried out under the Fourth east-west Highway Improvement Project (EWHIP-4) for works required to provide local access roads along the E-60 East-West Highway section Ruisi-Agara-Agara Bypass (km95 to km114). As a result of highway construction, accessibility to land plots became limited for local population of Ruisi and movement within the village got also disrupted because access roads had not been considered at the design stage and during construction works of Ruisi-Agara-Agara Bypass section. In order to ensure safe movement of agricultural equipment and domestic animals along the highway, also based on the request from local community concerning accessibility to agricultural lands, Roads Department developed design, bidding documents and supplemental ESIA for local access road pk0+72- pk35+11 section (right and left side), pk35+22 – pk68+53 (right side) and pk36+91 – pk68+50 (left side). Design and bidding documents for these additional works were prepared by “Proektmshenkompani” Ltd. based on the contract №TEWHIP AF/CS/CQS-03 signed with Roads Department of Georgia on August 31, 2015.

## 1.2 Methodology

Supplemental ESIA was carried out in compliance with the World Bank’s safeguard policy OP/BP 4.01 Environmental Assessment and law of Georgia on Environmental Protection.

Assessment process included the following main steps:

- Study and description of baseline conditions;
- Identification of environmental and social risks;
- Development of mitigation measures;
- Elaboration of environmental management and monitoring plans;
- Document disclosure and public consultation.

### **Environmental and social impacts and mitigation measures**

Because the present document is a supplement to the existing ESIA report prepared for main works on the highway within Ruisi-Agara-Agara Bypass section (km95 - km114), it does not re-iterate those risks and mitigation measures that are covered in the original ESIA report covering this section which is available at the Roads Department’s web page at [http://www.georoad.ge/uploads/files/TEWHIPAFEIA\\_Geo.pdf](http://www.georoad.ge/uploads/files/TEWHIPAFEIA_Geo.pdf). However there are some specific aspects related to the construction of local access roads, which are detailed herein.

## **Environmental impact related to the construction phase**

**Impact on vegetative cover:** removal of grass and top soil, cutting and removal of shrubs and tree felling during clearing of RoW, and impact on vegetation during vehicle movement. Number of trees to be removed is estimated at 40-50 trees. None of the species are included in Red List of Georgia. This vegetation is mainly of a secondary nature. Some trees comprise windbreakers. Each removed tree will be compensated (at a ratio 1:3).

**Impact on the existing infrastructure:** As a result of site survey it was identified that irrigation canals and low voltage power towers within the RoW will require relocation. Because this re-location is planned within the already acquired RoW, no additional land take is expected for accommodating shifted elements of infrastructure.

**Construction waste:** As a result of site survey it was identified that petrol station and concrete water collector ditches need to be demolished within the RoW. Construction waste shall be disposed at the landfill of local municipality upon the agreement with local authorities.

**Management of spoiled soil:** During construction of Ruisi-Agara-Agara Bypass section of the Highway, the contractor disposed spoiled soil at the area where the construction of local access roads is planned. Hence the soil will have to be moved again and disposed at the nearest borrow pit.

**Environmental impact related to operational phase:** dust pollution is expected on the gravel local roads. No other negative impacts are expected from the operation of the local access roads.

## **2 Description of Additional Works**

### **2.1 Overview**

Construction of Ruisi local road is focused at the improvement of transport services thus ensuring fast and safe movement of local population.



**2.2 Environmental classification and type of works**

Given that the construction of Ruisi local road will be implemented under the EWHIP-4 and that it is an additional activity related to Ruisi-Agara-Agara Bypass section (km95 to km114) additional works for the construction of local access roads are classified as environmental Category A according to the World Bank’s OP/BP 4.01. However environmental and social risks associated with these additional works are modest.

**2.3 Construction technology and structure of the road**

Preparation of the pavement design is a process involving selection of such pavement configuration and pavement related materials which will ensure adequate operation of the pavement and minimal maintenance needs, in view of transport loads calculated in advance. Traditionally, the designs in Georgia were developed based on soviet design standards. According to soviet method, a number of heavy vehicles (divided into categories) are used to determine transport loads and predetermined parameters of the soil in-situ are applied to identify strength of sub-base layer, pavement calculation is made in line with the soviet standard RADON-2 CREDO/DIALOGUE using design-analysis system (“Credo”).

Based on above mentioned, it is planned to construct a local road with asphalt concrete-pavement starting from interchange No.1 - to interchange No.2. Road axis is mainly 3.5-4.5 meters away from the alignment

of right lane of the highway to minimize the land take of private land plots. At local crossing pk15+45 and cattle passes km7+10, km24+49 the road axis has been moved 10-12 meters away from the entrance.

- Width of the roadbed including irrigation channel is 15,0 m;
- Width of the carriageway is 6,0m.

Planned works:

- Relocation of the existing 10 kV high voltage power line 1100m;



*Picture 1. Existing high voltage power line*



*Picture 2. Existing high voltage power line*

- Dismantling of concrete posts of air power line (h-9m) and installation in prearranged pits ( $\emptyset$ -30cm, depth 2.0m) – 22 pieces;
- Dismantling of the existing underground steel gas pipe  $d=75\text{mm}$  and installation of new one 22m;
- Dismantling of the existing fences: reinforced concrete  $3.2\text{m}^3$ ; wire net fence  $282\text{m}^2$ ;

- Dismantling of the existing culverts and channels: concrete - 54,8m<sup>3</sup>; scrap – 1,8t;



*Picture 3. Dismantling of the existing concrete culverts*

- Dismantling of the existing structures/buildings: 96,6m<sup>3</sup>;



*Picture 4. Structure to be demolished*

- Roadbed: removal of topsoil, loading and transportaiton to reserve 11548m<sup>3</sup>; soil treatment, loading and disposal at dump site 9661m<sup>3</sup>; construction of embankment 27724m<sup>3</sup>;
- For the construciton of local road it became necessary to clear the site from vegetative cover: cutting of shrubs and small trees and clearing the area from roots 15000m<sup>2</sup>; cutting of 28 trees (d=16-20cm – 10 pieces, d=20-30cm – 10 pieces, d=20-30cm – 8 pieces).



Picture 5. Shrubs and small trees

Along the whole section of the local road, under the roadbed in the right line of the highway are placed rectangular and round reinforce-concrete pipes:

- Diameter  $d=0,75\text{m}$  – pk6+42.
- Diameter  $1,0 \times 1,0\text{m}$  - pk1+52, pk32+78.
- Diameter  $1,25 \times 1,5\text{m}$  - pk1+96, pk4+08, pk8+38, pk11+85, pk14+17, pk15+77, pk17+97, pk24+35.

These pipes will be extended in order to arrange roadbed on pk15+77 and on pk24+35 reinforce-concrete canal of irrigation water should be covered with iron tile with dimension of  $3,6 \times 10,0$ . Round reinforce-concrete pipes  $d=1,0\text{m}$  will be used for other canals. The pipes inlets constructions are considered for 12 meters with reinforce-concrete channels.

Figure N 1. Design of irrigation canal-1

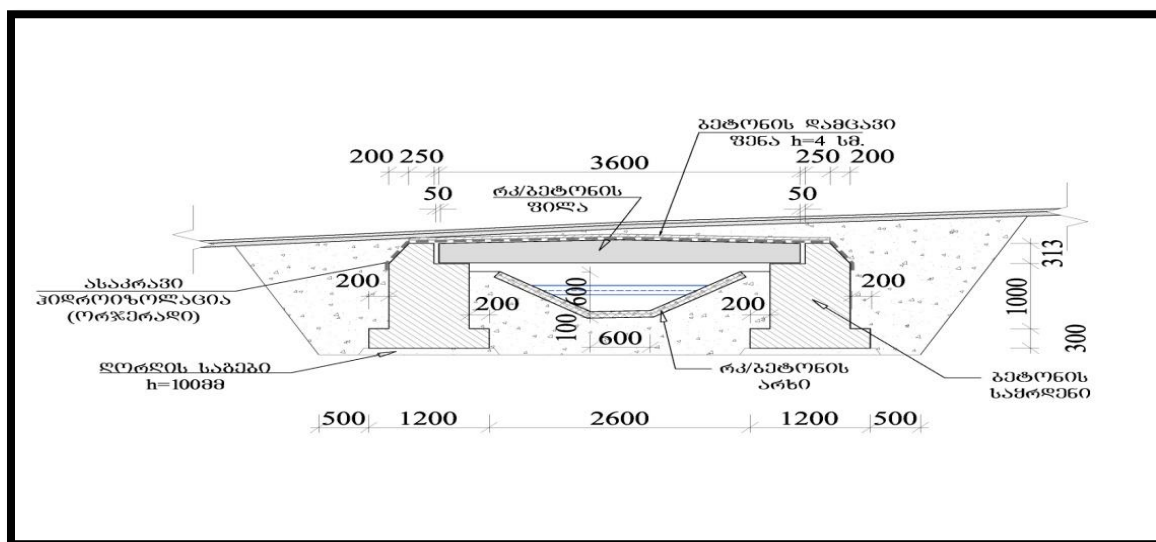
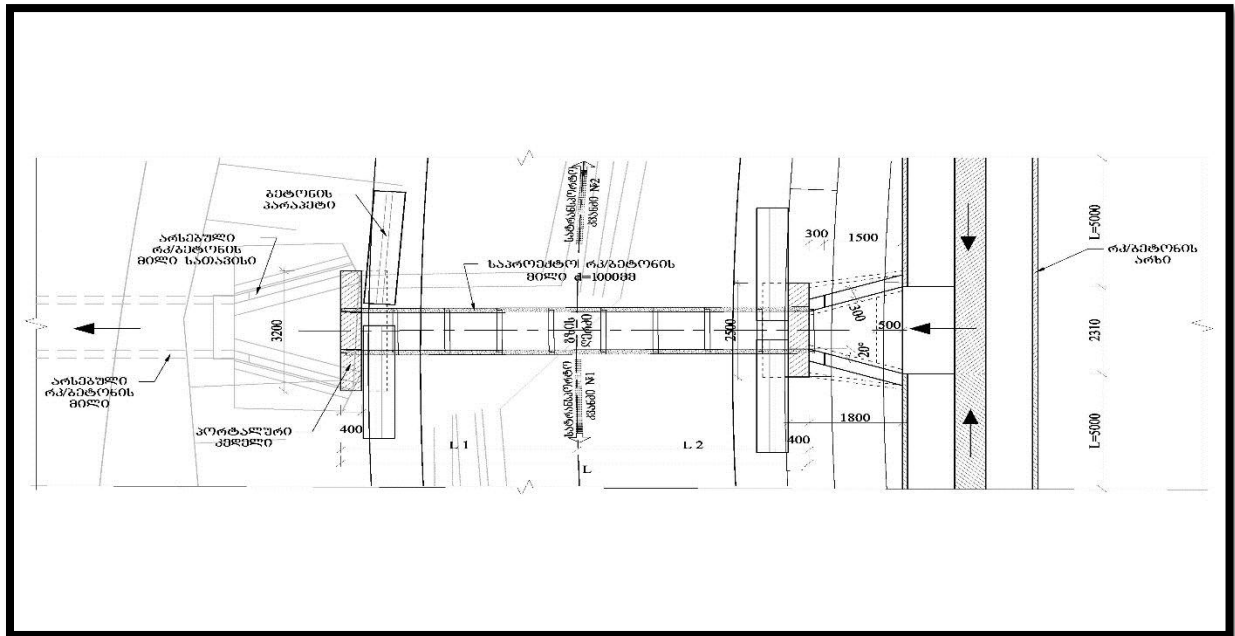


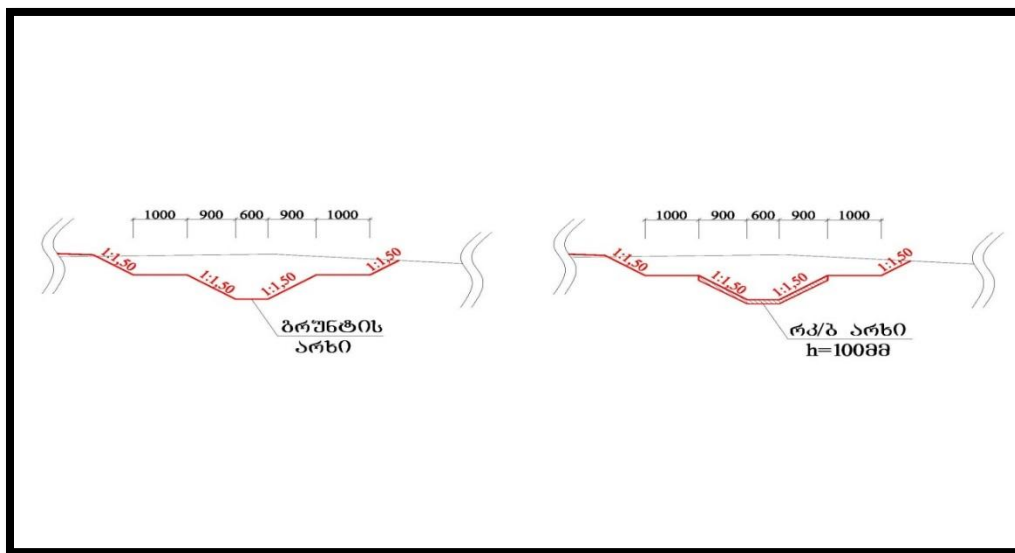


Figure 2. Design of irrigation canal-2



Along the right side of the whole local road is considered construction of trapezoidal irrigation canal, 2800m of soil, 435m of reinforce-concrete, which will also be the ditch and prevent roadbed from impact of water.

Figure 3. Design of irrigation canal-3



On the left side of the local road, a 2,458 meter long reinforce-concrete gutter will be constructed to rid off the water flown from the highway. It will be assembled with junctions.

## 2.4 Equipment to be used during construction

Exact equipment necessary for the construction will be listed after the contractor is chosen. In table one is indicated probable equipment and its quantity.

Table 1. Equipment and technique to be used during construction

Nº	Type of equipment	Minimal quantity of equipment
1	Bulldozer	4
2	Loader	3
3	Dump Truck	6
4	Grader	2
5	Load excavator	1
6	Shovel excavator	2
7	Vibratory Compactor	2
8	Pneumatic Compactor	1
9	Double drum roller	3
10	Surface vibrator	1
11	Crusher	1
12	Compressor	2
13	Portable Generator	2
14	Water tank with spreader	1
15	Crane	1

## 2. Baseline Biophysical Environment

Exhaustive information on all relevant biophysical characteristics of the Highway corridor within the Ruisi-Agara-Agara Bypass section (km95 to km114) are provided in the main ESIA report prepared for works on the Highway. These include data on climate, meteorology, geology, geomorphology, hydrology, hydrogeology, landscape, land use, soil, air quality, noise level, seismological conditions and hazardous processes, biological environment, flora, fauna, protected areas, socio economic and cultural environment. Additional information relevant for the construction of local access roads is as follows:

- There are soil and concrete irrigation channel located along the alignment of the local road. Concrete irrigation channel and its water collectors will be demolished, which causes construction waste creation;
- The Petrol station needs to be demolished, which causes construction waste and possibility of hazardous waste creation;
- There will be cuttings of 8-11 pine trees nearby the village Ruisi (right side); although, it is expected to cut some trees (No Red list species) during the widening of the local roads and at the interchanges;

- There are possibilities of relocation of 10kV power line poles in some places;
- There is possibility to affect the private land plots by cutting some trees during the construction of the local road along the alignment;
- There are naturally grown bushes and trees of Acacia nearby the second interchange (Village Ruisi) of the E-60 East-West Highway Ruisi-Agara-Agara Bypass section (km95 to km114) which should be removed during the construction works of the local road;
- It is planned to remove the top soil and store for subsequent use during the construction works at the Ruisi local road.

## 4. Mitigation Measures

### Environmental impact related to the construction phase

**Impact on vegetative cover:** Each removed tree shall be compensated with ratio 1:3 of the same species during the construction of the Ruisi local road. During offsite traffic movement there is possibility of soil compaction and impact to vegetative cover.

**Water pollution:** During construction of Ruisi local road the irrigation channels may be polluted with waste. Waste management will be required during the local road construction.

**Construction waste:** During construction of Ruisi local road the construction or other type of waste shall be disposed at the landfill of local municipality according the agreement.

**Land Management:** During construction of Ruisi local road the removed topsoil must be stored for subsequent use. Spoiled soil must be stored on the nearest borrow pit.

**Irrigation Channels:** The construction contractor, who will be identified by the tender, for the construction works of the Ruisi local road will arrange all procedures and agreements for the relocation of irrigation channels with local municipality.

**Power line poles and gas pipe:** The construction contractor, who will be identified by the tender, for the construction works of the Ruisi local road will arrange all procedures and agreements for the relocation of power line poles and gas pipe with its owner companies.

## 5. Environmental Management Matrix

### 5.1 Environmental mitigation and monitoring plans

Environmental management matrix is comprised of an environmental management plan providing mitigation measures, and an environmental monitoring plan. Both plants are presented in a table format

and divided into three main parts, dealing with the physical environment, with the biological environment, and with the socio-economic and cultural environment. Each part is organized by development stages, i.e. pre-construction, construction and road operation.

EMP will be included into the bidding documents so that bidders can consider and incorporate their environmental responsibilities into their bid proposals. Later EMP becomes an integral part of a contract for the provision of works and is binding for implementation.

## **5.1 Institutional framework**

The Roads Department of the Ministry of Regional Development and Infrastructure is responsible for general oversight of environmental compliance of works through ensuring quality performance of the technical supervisor and of the contractor. Roads Department will perform these functions through its Resettlement and Environment Division comprising twelve staff members with relevant education and professional skills, as well as the safeguards consultants with international experience hired for the technical supervision of operations. This in-house capacity will be supported by external individual consultants upon demand.

The supervisor of works commissioned by the Roads Department will be charged with the responsibility to establish strong field presence in the project area and supervise the works. Along with ensuring consistency with the design and quality of works, the supervisor is mandated to track the implementation of the EMP by the contractor, reveal any deviations from the prescribed actions, and identify any environmental / social issues should they emerge at any stage of the works.

Monitoring shall include visual observation and measurements as appropriate. Field testers and hand-held equipment shall be used to monitor short- term impact. Calibrated equipment and approved methods of monitoring must be used. Calibration must be done regularly, all calibration records and monitoring results, along with the copies of the site records, certificates, permits and documents shall be submitted and kept by the Roads Department.

Works supervisor will be responsible for reporting to the Roads Department on the environmental and social performance of works providers on monthly basis through including safeguard compliance section into the general reporting. Supporting photo material shall also be attached. Roads Department will make monthly reports from the works supervisor available to the World Bank upon demand. Also, Roads Department will include analytical sections on the EMP implementation and overall safeguard performance into the regular project progress reporting to the World Bank. This reporting will be based on the information received from the works supervisor, but should also reflect results of Roads Department's own due diligence (quality control over the supervisor's work) and Roads Department's assessment of supervisor's performance.

## Environmental Management and Monitoring

The environmental management and monitoring required at each individual stage of the Project are presented in the tables below.

*Table 1 Mitigation Plan for Construction Phase*

<b>AIR QUALITY</b>			
<b>Potential impact</b>	<b>Mitigation/Enhancement Measure</b>	<b>Responsibility</b>	
		<b>Development/Implementation</b>	<b>Control</b>
Exhaust emissions from the engines of construction vehicles and machinery	All vehicles, equipment and machinery used for construction will be regularly maintained and inspected/certificated to ensure that the pollution emission levels conform to the standards prescribed. Avoid idling of engines. Ban the use of poorly maintained machinery or equipment that cause excessive pollution (e.g., visible smoke, fuel/oil leaks).	Contractor	RD Construction supervisor
Dust generated during hauling of the construction materials	The construction materials (gravel, sand, etc.) will be transported in covered (for example, by tarpaulins) vehicles.		
Dust generated during the movement of vehicles	Water truck bowser with spray bar will be used to spray water on unsealed road surfaces, asphalt mixing sites and temporary service areas, for dust suppression		
<b>NOISE AND VIBRATION</b>			
<b>Potential impact</b>	<b>Mitigation/Enhancement Measure</b>	<b>Responsibility</b>	
		<b>Development/Implementation</b>	<b>Control</b>
Construction-related noise from vehicles, asphalt plants, crushing and batch plants, equipment	All vehicles, equipment and machinery used for construction will be regularly maintained and inspected/certificated to ensure that the noise levels conform to the standards prescribed.	Contractor	RD Construction supervisor
Noise Impact – Disturbance to residents	Restrict work between 06:00 to 21:00 hours within 500 m of the settlements. In addition, limit noise on construction site. Prohibit idling, use shields, if required; Maintain dialogue or use grievance mechanism to allow residents to contact Project staff and ask for additional measures.	Contractor	RD Construction supervisor
Noise impact on workers	Noise standards will be strictly enforced to protect construction workers from noise impacts, in accordance with international Health, Safety and Environment (HSE) standards and procedures. Personal Protection Equipment (PPE) (e. g., ear defenders) will be provided and used. Noise exposure will be limited to 85 dB(A).	Contractor	RD Construction supervisor

SOIL AND WATER			
Potential impact	Mitigation/Enhancement Measure	Responsibility	
		Development/Implementation	Control
Siltation of surface waters during construction and/or impact on soils due to improper disposal of excess materials	<ul style="list-style-type: none"> <li>• Biggest part of excavated soil will be reused, thus potential impacts due to the need for disposal of excess material will be kept to a minimum.</li> </ul> Temporary diversion of the streams will be applied to avoid pollution of the water. For this purpose cofferdams can be used. Another alternative, diversion of the flow via pipe.	Contractor	RD Construction supervisor
Soil compaction due to operation of heavy equipment	Operation of heavy equipment will be confined within the corridor to avoid soil compaction and damage to land.	Contractor	RD Construction supervisor
Loss of top soil	<ul style="list-style-type: none"> <li>• All of the removed top soil within the corridor will be stored for reuse. Long-term stockpiles of topsoil will immediately be protected to prevent erosion or loss of fertility.</li> <li>• Topsoil shall be stripped and reused during re-cultivation of disturbed sites.</li> <li>• Soil management plan shall be provided. The plan will describe measures to be undertaken to minimize effects of wind and water erosion on stockpiles, measures to minimize loss of fertility of top soil, timeframes, haul routes and disposal sites.</li> </ul> Prior to operation of borrow pits, the contractor shall develop and submit reinstatement plan – indicating location of the borrow pits, rehabilitation measures, implementation schedule (Rehabilitation measures may not be necessary for borrow areas still in operation after road works have finished).	Contractor	RD Construction supervisor
Sand and gravel borrow pit-disturbance of river bed, water quality, ecosystem disturbance	It is allowed to use existing borrow pits or buy material at licensed facilities; no borrowing from the stream.	Contractor	RD Construction supervisor
ECOLOGY AND NATURAL ENVIRONMENT			
Potential impact	Mitigation/Enhancement Measure	Responsibility	
		Development/Implementation	Control
Potential damage of trees during excavation/ construction activities	Avoiding any damage to the existing trees during construction activities a temporary vegetation protection fence shall be established.	Contractor	RD Construction supervisor

Impacts on flora	Clearing up and removal of vegetation will be minimized to the extent necessary for the execution of works. Re-vegetation will be performed.	Contractor	RD Construction supervisor
Domestic and wild animals straying onto the road and being killed	Installation of a protective fence along the road, and fencing of excavated sites as a measure to prevent domestic and wild animals straying onto the road and being killed or falling into the excavations. Protective fences will be of various density. For small animals boards or corrugated metal shields can be used. For larger animals color ribbons can be used as a generally accepted practice.	Contractor	RD Construction supervisor
<b>VISUAL AND AGRICULTURE</b>			
Potential impact	Mitigation/Enhancement Measure	Responsibility	
		Development/ Implementation	Control
Damage to agricultural lands, including impacts of drainage and irrigation infrastructure	<ul style="list-style-type: none"> <li>Grievance procedure will be developed before start of construction;</li> <li>Machinery and vehicle access will be strictly limited;</li> </ul> All the affected areas will be restored.	Contractor	RD Construction supervisor
Livestock resources damaged by machinery and vehicles	<ul style="list-style-type: none"> <li>Grievance procedure will be developed before start of construction;</li> <li>Machinery and vehicle access will be strictly limited;</li> </ul> All the affected areas will be restored.	Contractor	RD Construction supervisor
Arrangement of new borrow pits or stone quarries, possibly damaging agricultural or archaeological	<ul style="list-style-type: none"> <li>Contractor have to use the Borrow pits on a specific locations which are predefined within the detailed design.</li> <li>Advantage should be given to already license sourcing areas.</li> </ul> Use existing quarries or obtain license to run own quarry	Contractor	RD Construction supervisor
<b>HEALTH AND SAFETY</b>			
Potential impact	Mitigation/Enhancement Measure	Responsibility	
		Development/ Implementation	Control
Health and safety risks to workers and adjacent communities	<ul style="list-style-type: none"> <li>The following will be provided: Adequate health care facilities (including first aid facilities) within construction sites;</li> <li>Training of all construction workers in basic sanitation, general health and safety matters, and on the specific hazards of their work;</li> <li>Personal protection equipment (PPE) for workers, such as safety boots, helmets, gloves, protective clothing, goggles, and ear protection in accordance with HSE legislation;</li> <li>Clean drinking water to all workers;</li> <li>Barriers and warning signs at all hazardous areas for protection to the general public;</li> <li>Periodic cleaning of latrines and waste container to prevent outbreak of diseases.</li> </ul>	Contractor	RD Construction supervisor MENRP

	<ul style="list-style-type: none"> <li>• Where feasible contractor shall arrange temporary integration of waste collection from work sites into existing waste collection systems and disposal facilities of nearby communities.</li> <li>• Training/briefing about safety – prior to commencement of works in rules for the handling and storage of hazardous substances (fuel, oil, lubricants, bitumen, paint) and cleaning of machinery/equipment.</li> <li>• Keeping to occupational safety rules during operation in tunnel and drill and blast works.</li> <li>• Briefing related to safety during operation in the confines space.</li> <li>• Implement international HSE standards in all contracts.</li> </ul> <p>Working on height and other safety requirements relevant to the task will be enforced.</p>		
Residents injured by construction traffic and machinery	Conduct safety awareness campaigns, focusing on schools and children.	Contractor	RD Construction supervisor
<b>TRAFFIC, MACHINERY</b>			
Potential impact	Mitigation/Enhancement Measure	Responsibility	
		Development/Implementation	Control
Asphalt plants	Use existing asphalt plants or obtain permit from MENRP.	Contractor	RD Construction supervisor
Traffic disruption	<p>Develop Traffic Management Plan in conjunction with road authorities to manage all temporary accesses, delivery of material and machinery.</p> <p>Submit a traffic management plan to local traffic authorities prior to mobilization.</p> <p>Provide information to the public about the scope and schedule of construction activities and expected disruptions and access restrictions.</p> <p>Allow for adequate traffic flow around construction areas.</p> <p>Provide adequate lighting, well-designed traffic safety signs, barriers and flag persons for traffic control.</p>	Contractor	RD Construction supervisor



**Table 3 Mitigation Plan for Operation phase**

Activity	Location	Issue	Mitigation measure	Responsible authority (implementation)	Responsible agency (monitoring)
Accidental fuel/oil spill and/or roadside litter washed off/blown off	Surface water	Water pollution	<ul style="list-style-type: none"> <li>• The trained Maintained Contractor during the operation phase will have emergence respond plan for response mitigation measures. The above mentioned team will work according to this plan and will reduce and avoid the contamination of the water at the culverts by covering the spilled areas with the sand, after the sand will absorb the contamination sand will be taken to the specialized landfill areas;</li> <li>• But if the spilled oil/fuel accidentally will be run to the culverts, the spilled oil/fuel is going to the sediment trap with filter (during cleaning of the culverts no water is used). The contaminated soil is excavated and is taken to the specialized landfill areas;</li> <li>• During the ordinary cleaning the Maintained Contractor will clean the culvert from the sediments mechanically without water usage;</li> <li>• Control over truck traffic to minimize spills;</li> </ul>	Road Maintenance Contractor	RD, Traffic Police
Road resurfacing	Road	Water bodies pollution by heavy metals, hydrocarbons and debris	<ul style="list-style-type: none"> <li>• Maintenance paving should be performed only in dry weather to prevent runoff contamination.</li> <li>• Proper staging techniques should be used to reduce the spread of paving materials during the repair of potholes and worn pavement. These can include covering storm drain inlets and manholes during paving operations, using erosion and sediment controls to decrease runoff from repair sites, and using drip pans, absorbent materials and other pollution prevention materials to limit leaks of paving materials and fluids from paving machines.</li> </ul>	Road Maintenance Contractor	RD
Noise	Residential area	Disturbance of local residents by traffic related noise	Currently not required	n/a	n/a

Littering	Along the new road	Possible negative impact, Water pollution, Aesthetic impact	Ensure that the community is aware of the range of ways to dispose of their waste correctly; Inform the community of the level of fines that littering incurs; Signage may be an element of a roadside litter prevention program, educating the community that littering is illegal, fines apply and behaviors are monitored. The signs may be suitable for placement in a series of two to four signs at 10 km intervals to repeat the message in different ways. Cleaning up	Road Maintenance Contractor	RD
Status of biodiversity	Along the new road	Impact on vegetation, Road kills of animals	Remove faded plants, replace them with new Keep records of accidents. If accident hot spots with large mammals is identified, appropriate protective measures shall be elaborated (e.g. reflectors /local fencing, warning signs, speed reduction)	Road Maintenance Contractor	RD
Traffic	Along all road sections	Accidents due to winter typical hazards (snow, ice, fog)	Installation of warning signs Informing	Road Maintenance Contractor	RD

**Table 4 Monitoring Plan**

Issue	What parameter is to be monitored?	Where is the parameter to be monitored?	How Is the parameter to be monitored?	When is the parameter to be monitored? (Frequency)	Institutional responsibility
<b>CONSTRUCTION PHASE</b>					
Waste water	Quality parameters of waste water from construction camps and portable sites, according to relevant standards	At portable facilities at work sites	Inspection of wastewater units, latrines and septic tanks	Frequency defined by Georgian Environmental standards	RD, Construction Supervisor
Community tension and disruption	Satisfaction/disturbance level of the residents	Construction sites	Observation, surveys	Regular frequency or when changing operations	RD, Construction Supervisor
Impact on topsoil	Striping of the topsoil Stockpiling, Protection from erosion and washing away	Worksite	Inspections; observation	During removal of the topsoil layer and preparation of the sites, After stockpiling, After completion of works on shoulders	RD, Construction Supervisor
Oil/fuel spills	Oil/fuel spills	Worksite, car maintenance, servicing area (if available)	Inspections; observations	Unannounced inspections during construction	RD, Construction Supervisor
Impacts created by material transport (stone, sand and gravel)	Are the truck loads covered or wetted; Restricted working hours; Dust suppression methods where required	Worksite / haul routes	Supervision	Unannounced inspections during work	RD, Construction Supervisor
Impacts on trees near the working area	Are the trees located close to the project area protected by fence.	At sites where trees and forests are located along the construction site.	Supervision	After begin of construction works at the respective site	RD Construction Supervisor
Air pollution	Exhaust emissions, dust	At site	Visual inspection, measurements of exhaust emissions	Unannounced inspections during construction works	RD Construction Supervisor, MENRP

Dustiness	Visual presence of dust	At construction sites	Visual monitoring	Regularly site visits	RD, Construction Supervisor
Contamination of soil during construction	Heavy metals and greases and oils	Agricultural land	Soil quality analysis	One month before the commencement of works. During construction - quarterly.	RD, Construction Supervisor
Noise	Noise Levels	Village	Noise measurement equipment	Quarterly	RD, Construction Supervisor
Material supply Concrete production	Obtaining valid operation license or purchasing from licensed provider	Asphalt /concrete plant	Inspection	Before work begins	RD , Construction Supervisor
Material supply Borrow areas	Obtain a license for material extraction	Sand and gravel borrow pit	Inspection	Before work begins	RD, Construction Supervisor
Damage to irrigation and other infrastructure	Visual damages	Agricultural lands	Visual observations	Weekly	RD, Construction Supervisor
Material production/ extraction	Asphalt/concrete plant - possession of official approval or valid operating license	Asphalt /concrete plants	Supervision inspection	before work begins	RD, MENRP
Material production/ extraction	Stone quarry – availability of license	Quarry	Supervision inspection	before work begins	RD, MENRP
Transportation	Traffic management - hours and alignments selected	Job site	Supervision inspection	Regular inspections during work	RD, Construction Supervisor
Vibration (whether appropriate)	Vibration levels	Job site	Supervision, observations	Regular inspections during work and on complain	RD, Construction Supervisor
Traffic disruption	Existence of traffic management plan	At job site	inspection; observation	Before works start; once per week at peak periods	RD, Construction Supervisor
Workers safety	Protective equipment; organization of bypassing traffic	Work site	inspection	Regular inspections during work	RD, Construction Supervisor

Slope stability	Status of slopes	Sensitive areas	Stability , identification of visual traces of possible erosion	Seasonally after adverse weather events(storm, gale)	RD, Construction Supervisor
Impact on planted areas	Status of vegetation	Planted vegetation areas	Visual control	Seasonally	RD, Construction Supervisor
Noise disturbance (residents, workers)	Noise levels	Worksite, nearest residential areas	Noise meter	Upon receipt of complaints	RD, Construction Supervisor
OHS	Use of PPE relevant to the task; Training records; Organization of traffic on the construction site Keeping to the safety rules while working in the tunnel and/or on height	Worksite	Inspection; interviews; comparisons with the Contractor's method statement	Unannounced inspections during construction and upon complaint	RD, Construction Supervisor

## 6. Public Consultation

### MINUTES

of public consultation meeting on  
Supplemental Environmental and Social Impact Assessment  
for construction works of local roads at  
pk0+75 - pk35+11 right and left side,  
pk35+22 – pk68+53 right side and pk36+91 – pk68+50 left side  
of the E-60 East-West Highway in Ruisi-Agara-Agara Bypass section (km95 to km114)

29.12.2015

#### Ruisi

Administration Building of Kareli Municipality

*Chairman of meeting* - Gia Sopadze

*Secretary of meeting* - Maya Vashakidze

*Speakers:* Gia Sopadze - Head of Environmental Protection Unit Resettlement and  
Environmental Protection Division, RDMRDI

Maya Vashakidze - Environmental Consultant, RDMRDI

*Attendees of the Meeting:* - See attachment 1

*Agenda of the Meeting* -

1. Introduction and context;
2. Presentation of the Supplemental Environmental and Social Impact Assessment for construction works of local road at pk0+75 - pk35+11 right and left side, pk35+22 – pk68+53 right side and pk36+91 – pk68+50 left side of the E-60 East-West Highway in Ruisi-Agara-Agara Bypass section (km95 to km114);
3. Questions & answers

*Topic presented:* Mr. Gia Sopadze made an introduction about construction of the E-60 highway and about the local access roads in Ruisi. The speaker mentioned that Georgia, located along the transit corridor and connecting Europe and Asia, has a potential to connect some countries in the region with global economy. World Bank has been financing series of East-

West Highway Improvement Projects (EWHIP) for a number of years. To ensure safe movement of agricultural equipment and domestic animals along the highway and based on the request from local community, Roads Department developed design and bidding documents, and carried a supplemental environmental and Social Impact Assessment (ESIA) of local access road pk0+72- pk35+11 section (right and left side), pk35+22 – pk68+53 (right side) and pk36+91 – pk68+50 (left side). These roads will ensure convenient access of local residents to their agricultural fields and to neighboring villages. Design and bidding documents for these additional works were prepared by *Proektmshenkompani* Ltd. based on the contract №TEWHIP AF/CS/CQS-03 signed with Roads Department of Georgia on August 31, 2015. The supplemental ESIA was undertaken based on the World Bank's safeguard policy OP/BP 4.01 *Environmental Assessment* and is a part of the existing ESIA report prepared for the main works on the highway within Ruisi-Agara-Agara Bypass section (km95 - km114). Local roads in Ruisi will be constructed as part of EWHIP-4. Works for the construction of local access roads fall under environmental Category A because these works are part of a category A EWHIP-4, however environmental and social risks associated with these additional works are modest.

Ms. Maya Vashakidze provided information about the World Bank OP/BP 4.01 Environmental Assessment and explained World Bank's guidelines for environmental and social management.

Below is a summary of Q&A session which followed presentations by the Roads Department:

	Question	Answer
1.	When the construction of the new local roads will start?	It is planned to start construction works in the first quarter of the 2016.
2.	Will the local population have any preference in being employed during the construction works?	The local population will be employed during the construction works. Based on the experience and practices under the similar road projects, it could be assumed that about 60%-70% will be local residents employed during the local access road construction. Both: semi-skilled and unskilled local workers are likely to be hired for works on E-60.
3.	Will the local population have the irrigation channels for watering their land plots during the spring time?	The Roads Department will take into account request from the local population and will demand the contractor to arrange irrigation channels before the spring time.
4.	Will the local population be protected from the noise?	According to the supplemental ESIA report, the local population will not experience significant noise disturbance neither at the construction phase, not during operation of the highway. Noise levels event in the settlements closest to the construction sites will be within permitted range. In addition, RD will ensure that construction equipment is maintained in a good technical condition and that no noisy activities are performed beyond work hours set between 07:00am to 07:00pm. As for the operation phase, modelling of noise impacts showed that there will be almost no noise impact to the local population and no specific mitigation measures are required.

**Gia Sopadze** (signed)



Head of Environmental Protection Unit  
Resettlement and Environmental Protection Division RDMRDI

**Maya Vashakidze** (signed)



Environmental Consultant RDMRDI



Attachment 1

აღმოსავლეთ-დასავლეთ მაგისტრალის E-60 რუისი-აგარა-აგარას შემოვლითი გზის მონაკვეთის (კმ 95 -კმ114) გასწვრივ სოფლის გზების მშენებლობა პკ0+75 – პკ35+11 მარჯვენა და მარცხენა მხარის, პკ35+22 – პკ68+53 მარჯვენა მხარის და პკ36+91 – პკ68+50 მარცხენა მხარის ბუნებრივ და სოციალურ გარემოზე ზემოქმედების შეფასების დანართი

29.12.2015

სახელი, გვარი	საკონტაქტო ინფორმაცია	შენიშვნა
ქუჩაძე ვაჟა	598-78-75-62	
ვახუშტიანი	595-14-16-21	
სიძნ. ყაიხაძე	551.19.66.21	
მეგობერი ვახუშტი	595-45-78-73	
ვახუშტიანი ვახუშტი	595-74-52-25	
ქუჩაძე ვახუშტი	598-58-60-46	

აღმოსავლეთ-დასავლეთ მაგისტრალის E-60 რუისი-აგარა-აგარას შემოვლითი გზის მონაკვეთის (კმ 95 - კმ114) გასწვრივ სოფლის გზების მშენებლობა პკ0+75 - პკ35+11 მარჯვენა და მარცხენა მხარის, პკ35+22 - პკ68+53 მარჯვენა მხარის და პკ36+91 - პკ68+50 მარცხენა მხარის ბუნებრივ და სოციალურ გარემოზე ზემოქმედების შეფასების დანართი

29.12.2015

სახელი, გვარი	საკონტაქტო ინფორმაცია	შენიშვნა
მეტეხიშვილი გივი	571 19 60 90	
ქაჩიანი ივანე	598 - 96 - 72 - 94	
ქაჩიანი სიმონ	595 - 077 - 088	
ღანა მახიაძე	595 - 40 - 21 - 40	
მანანა ჯავლიანი	595 - 35 - 09 - 80	
თორნი ენდრეაშვილი	595 17 - 16 - 36	

აღმოსავლეთ-დასავლეთ მაგისტრალის E-60 რუისი-აგარა-აგარას შემოვლითი გზის მონაკვეთის (კმ 95 - კმ114) გასწვრივ სოფლის გზების მშენებლობა პკ0+75 - პკ35+11 მარჯვენა და მარცხენა მხარის, პკ35+22 - პკ68+53 მარჯვენა მხარის და პკ36+91 - პკ68+50 მარცხენა მხარის ბუნებრივ და სოციალურ გარემოზე ზემოქმედების შეფასების დანართი

29.12.2015

სახელი, გვარი	საკონტაქტო ინფორმაცია	შენიშვნა
მელიქიძე ვაჟა	596-10-32-12	
ქვიციანი ვაჟა	სოფელი რუისი	
ვაჟა ვინაძე	577 111 340	
ვახუშტიანი	599112284	
ვაჟა მამუკაშვილი	599 48-45-49	
ვაჟა კვიციანი	599 360-396	

