# Environmental Management Plan

for rehabilitation of secondary road

Chokhatauri - Bakhmaro road Km 4+000 – km 6+000

> Tbilisi, Georgia 2013

## **PART 1: GENERAL PROJECT AND SITE INFORMATION**

Country	Georgia				
Project title	Rehabilitation of km4-km6	section of Chokhatauri-Ba	khmaro road		
Scope of project and activity	The project will finance refroad, which implies improvasphalt concrete, which is surface area. Longitudinal by 7 culverts of differing direhabilitation or cleaning. Texisting ones will be conditional to the project of the project o	nabilitation of 3.112 km lon rement of the existing 6m valuement of the existing 6m valuement of all in and lateral gradients are commeter and length, out of valuement of the new side ditches will be	g section of Chokhatan wide carriageway. Roa gator) cracks for over to disrupted. Project road which 2 have to be rep e excavated along the	d is surfaced with 50% of the total section is crossed laced and 5 require	
Institutional arrangements (Name and contacts)	WB Project Management Local Counterpart and/or Recipient  (Project Team Leader) Giorgi Tsereteli Chokhatauri Municipality  RDMRDI				
Implementation arrangements (Name and contacts)	Safeguard Supervision WB Darejan Kapanadze	Local Counterpart Supervision Technical Supervisor RRMSD Ltd.	Local Inspectorate Supervision -	Contractor Gzamsheni 18 Ltd.	
SITE DESCRIPTION	<u> </u>			<u> </u>	
Name of site	km 4 - km 6 section of Cho	khatauri-Bakhmaro local r	oad; Chokhatauri rayo	n; Guria region.	
Describe site location	Rehabilitation section begins in the town of Chokhatauri, at km 4 of the Chokhatauri-Bakhmaro road, passes the village of Akhalsheni, and ends in village of Khidistavi, at km 6 of the same road. Entire length of the section is 3112 m.  Attachment 1: Consultation meeting minutes Attachment 2: Permits and Agreements				
Who owns the land?	Chokhatauri Municipalty				
Description of geographic, physical, biological, geological, hydrographic and socio-economic context	Location - Chokhatauri-Bakhmaro road section lies in the mountain terrain and crosses river Supsa and river Gubazeuli. Besides these, two large landslides being in weakly active dynamic phase are observed along the rehabilitation road (from km 1+800 to km 1+900 and from km 2+150 to km 2+450) with aggregated length of 400 m and thicknesses exceeding 10 m.  Air - Air quality in the project area is good due to low traffic levels and the absence of industrial facilities.  Water and Soil - No pollution is reported.  Flora - The construction activities will be carried out in the existing alignment and without alteration of the existing elements (straights, curves, widths etc.). Vegetation would only be affected in the sections were side drains are to be rehabilitated or reconstructed. Vegetation is sparse along the road with rare occurrence of bushes and small trees that are not part of riparian forests. No protected species have been observed in the vicinity of the road.  Fauna – Impacts upon fauna will remain unchanged during construction since works will be confined to the existing road. There are several rivers that are crossed by the road. Works in these sections will be restricted to rehabilitation of bridge abutments, requiring the removal of garbage or other impediments to water flows; resulting in a positive impact on existing fauna.  Noise - The current noise level is low due to low traffic levels and a lack of industrial facilities. The project will have modest impact on the village population, as construction works will constraint movement only of those people who reside immediately along the road and this impact will be limited to the rehabilitation phase.				
Locations and distance for material sourcing, especially aggregates, water, stones?	Asphalt will be purchased from an existing registered vendor.				

#### **LEGISLATION**

Identify national & local legislation & permits that apply to project activity

The project triggers World Bank OP/BP 4.01 - Environmental Assessment and, according to its principles, has been classified as environmental Category B. The present EMP has been prepared to meet requirements of OP/BP 4.01.

Georgian legislation does not require any type of environmental review, approval, or permitting for the project. Though according to the national regulatory system,

- works contractor must be licensed,
- construction materials must be obtained from licensed providers,
- (ii) (iii) 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,
- if contractor wishes to operate own asphalt or concrete plant (rather than (iv) purchasing these materials from other providers), then the contractor must obtain an environmental permit with an established ceiling of pollutant concentrations in
- (v) disposal of the construction waste into a landfill or permanent placement of access inert material generated in the course of earth works in a selected location must be approved by local (municipal) governing bodies in written.

#### **PUBLIC CONSULTATION**

Identify when / where the public consultation process took place Environmental Management Framework for the Secondary and Local Roads Project II was disclosed through the RDMRDI web page and a stakeholder consultation meeting was held on 03/02/2012. The present site-specific EMP consultation meeting with local communities was held on 24 May 2012. The minutes of this meeting is uploaded on the department web-site.

#### **INSTITUTIONAL CAPACITY BUILDING**

Will there be any capacity building? [x] N or []Y if Yes, Attachment 2 includes the capacity building program

### **PART 2: SAFEGUARDS SCREENING AND TRIGGERS**

ENVIRONMENTAL	/SOCIAL SCREENING FOR SAFEGUARDS TRIGGERS		
	Activity/Issue	Status	Triggered Actions
	A. Roads rehabilitation	[ <b>x</b> ] Yes [ ] No	If "Yes", see Section <b>A</b> below
	B. New construction of small traffic infrastructure	[ ] Yes [ <b>x</b> ] No	If "Yes", see Section <b>A</b> below
Will the site	C. Impacts on surface drainage system	[ <b>x</b> ] Yes [ ] No	If "Yes", see Section <b>B</b> below
	D. Historic building(s) and districts	[ ] Yes [ <b>x</b> ] No	If "Yes", see Section <b>C</b> below
include/involve any of the	E. Acquisition of land	[ ] Yes [ <b>x</b> ] No	If "Yes", see Section <b>D</b> below
following??	F. Hazardous or toxic materials	[ ] Yes [ <b>x</b> ] No	If "Yes", see Section <b>E</b> below
	G. Impacts on forests and/or protected areas	[ ] Yes [ <b>x</b> ] No	If "Yes", see Section <b>F</b> below
	H. Risk of unexploded ordinance (UXO)	[ ] Yes [ <b>x</b> ] No	If "Yes", see Section <b>G</b> below
	I. Traffic and Pedestrian Safety	[ <b>x</b> ] Yes [ ] No	If "Yes", see Section H below

#### **PART 3: MITIGATION MEASURES**

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
<b>0</b> . General Conditions	Notification and Worker Safety	<ul> <li>(a) The local construction and environment inspectorates and communities have been notified of upcoming activities</li> <li>(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)</li> <li>(c) All legally required permits have been acquired for construction and/or rehabilitation</li> <li>(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.</li> <li>(e) Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots)</li> <li>(f) Appropriate signaporting of the sites will inform workers of legucy place and regulations to follow.</li> </ul>
A. General Rehabilitation and /or Construction Activities	Air Quality	<ul> <li>(f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow.</li> <li>(a) During excavation works dust control measures shall be employed, e.g. by spraying and moistening the ground</li> <li>(b) Demolition debris, excavated soil and aggregates shall be kept in controlled area and sprayed with water mist to reduce debris dust</li> <li>(c) During pneumatic drilling or breaking of pavement and foundations dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site</li> <li>(d) The surrounding environment (side walks, roads) shall be kept free of soil and debris to minimize dust</li> <li>(e) There will be no open burning of construction / waste material at the site</li> <li>(f) All machinery will be well maintained and serviced and there will be no excessive idling of construction vehicles at sites</li> </ul>
	Noise	<ul> <li>(a) Construction noise will be limited to restricted times agreed to in the permit</li> <li>(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</li> </ul>
	Water Quality	(a) The site will 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 causing excessive turbidity in canalization and nearby streams and rivers
	Waste management	<ul> <li>(a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from excavation, demolition and construction activities.</li> <li>(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.</li> <li>(c) Construction waste will be collected and disposed properly into formally agreed upon locations.</li> <li>(d) Whenever feasible Contractor will reuse and recycle appropriate and viable materials (except when containing asbestos)</li> </ul>
<b>B</b> . Impacts on surface drainage system	Water Quality	<ul> <li>(a) There will be no unregulated extraction of groundwater, nor uncontrolled discharge of process waters, cement slurries, or any other contaminated waters into the ground or adjacent streams or rivers.</li> <li>(b) There will be proper storm water drainage systems installed and care taken not to silt, pollute, block or otherwise negatively impact natural streams, rivers, ponds and lakes by construction activities.</li> <li>(c) There will be procedures for prevention of and response to accidental spills of fuels, lubricants and other toxic or noxious substances.</li> <li>(d) Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.</li> </ul>

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
C. Historic building(s)	Cultural Heritage	<ul> <li>(a) If construction works take place close to a designated historic structure, or are located in a designated historic district, notification shall be made and approvals/permits be obtained from local authorities and all construction activities planned and carried out in line with local and national legislation.</li> <li>(b) It shall be ensured that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted and registered, responsible officials contacted, and works activities delayed or modified to account for such finds.</li> </ul>
D. Acquisition of land	Land Acquisition Plan/Framework	<ul> <li>(c) If expropriation of land was not expected but is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the Bank's Task Team Leader shall be immediately consulted.</li> <li>(d) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented</li> </ul>
E. Toxic materials	Asbestos management	<ul> <li>(a) If asbestos is located on the project site, it shall be marked clearly as hazardous material</li> <li>(b) When possible the asbestos will be appropriately contained and sealed to minimize exposure</li> <li>(c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust</li> <li>(d) Asbestos will be handled and disposed by skilled &amp; experienced professionals</li> <li>(e) If asbestos material is stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. Security measures will be taken against unauthorized removal from the site.</li> <li>(f) The removed asbestos will not be reused</li> </ul>
	Toxic / hazardous waste management	<ul> <li>(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</li> <li>(b) The containers of hazardous substances shall be placed in an leak-proof container to prevent spillage</li> <li>(c) The wastes shall be transported by specially licensed carriers and disposed in a licensed facility.</li> <li>(d) Paints with toxic ingredients or solvents or lead-based paints will not be used</li> </ul>
<b>F</b> . Affected forests, wetlands and/or protected areas	Ecosystem protection	<ul> <li>(a) All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities.</li> <li>(b) A survey and an inventory shall be made of large trees in the vicinity of the construction activity, large trees shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided</li> <li>(c) Adjacent wetlands and streams shall be protected from construction site run-off with appropriate erosion and sediment control feature to include by not limited to hay bales and silt fences</li> <li>(d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.</li> </ul>
<b>G</b> . Risk of unexploded ordinance (UXO)	Hazard to human health and safety	(a) Before start of any excavation works the Contractor will verify that the construction area has been checked and cleared regarding UXO by the appropriate authorities
H Traffic and pedestrian safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	<ul> <li>(b) 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</li> <li>Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards</li> <li>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.</li> <li>Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement</li> <li>If required, active traffic management by trained and visible staff at the site for safe passage for the public</li> <li>Ensuring safe and continuous access to all adjacent office facilities, shops and residences during construction</li> </ul>

### **PART 4: 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 of construction materials	Purchase of the construction materials from licensed providers	Offices and warehouses of material suppliers, and borrowing sites	Checking documents; Inspection of material quality	In the process of signing the agreements for material provision	Ensure technical quality of construction;  Protect human health and environment	Roads Department (RD)
Transportation of construction materials and waste  Movement of construction equipment	Technical condition of construction vehicles and machinery;  Adequacy of the loading trucks for transported types of cargo, and canopy coverage of cargo transported in open trucks;  Movement of construction vehicles and machinery along pre-defined routes.	Routes for transportation of construction materials and construction wastes	Inspection of roads adjacent to the construction site and included in the agreed-upon routes of transportation	Unannounced checks during the working hours	Avoid air and road pollution eith dust and solid matter;  Reduce traffic disruption	RD; Traffic Police
Operation of Construction machinery on site	Proper technical condition of construction machinery:  • no excessive exhaust,  • no fuel leakage,  • respect of working hours	Construction site	Inspection	Within and off working hours	Reduce air and soil pollution caused by equipment operation; Reduce noise and dust nuisance to local population	RD
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	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	RD

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	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.				emergency action to promptly localize fire source and minimize material damage	
Extraction of inert material	Purchase of inert material from the existing providers if possible;  Obtaining license for extraction of material by the Contractor and strict adherence to the terms of such license;  Terrace processing of the borrow pits, backfilling of excess material, and harmonization with landscape;  River bed gravel extraction away from water flow, arrangement of gravel barriers for isolating extraction area from water flow, prevention of water flow entry by vehicles and machinery;  Demarcation of borrow areas with warning signs	Borrow areas	Checking documents Inspection of activities	The period of material extraction	Reduce slope erosion and damage to the ecosystem and landscape;  Reduce river bank erosion, water pollution with suspended particles, and impact on the aquatic life;  Protection of animals and people from accidents	RD Agency of Natural Resources

Generation of construction waste	Temporary storage of inert and hazardous wastes separately at the designated locations;  Timely disposal of waste to the formally designated landfills;  Hand-over of hazardous wastes to licensed deactivating and processing companies.	Construction site and base (if applicable);  Locations designated for waste disposal	Checking documents; Visual observation	Entire period of construction	Avoid pollution of the environment	RD; Local Municipality
Accumulation of household waste	Provision of waste containers on-site;  Agreement with local municipality for regular out-transporting of waste	Construction site and base (if applicable)	Visual inspection	Entire period of construction	Avoid pollution of soil and water with household waste	RD; Local Municipality
Generation of liquid waste	Arrangement and operation of toilets compliant with sanitary norms on-site;  Arrangement of drainage system for storm water collection and periodic cleaning of the system from silt;  Arrangement of sedimentation pool for waste water collection on-site	Construction site and base (if applicable)	Visual inspection	Entire period of construction  Increased frequency of inspection in periods of high precipitation	Avoid flooding of construction site and base;  Reduce pollution of surface and ground water	RD
Operation of asphalt-concrete plant	Obtaining permit for impacting environment by Contractor and strict adherence to its terms;  Placement of plant in the location permissive for minimal disturbance of local population;  Arranging sedimentation pool for capturing of liquid discharges from plant	Construction site and base (if applicable)	Checking documents Inspection	Before establishment of plant and during entire period of its operation	Reduce inconvenience for local population due to plant operation; Reduce air and surface water pollution from emissions and discharges from plant	RD; Environment Protection Agency

Safety of labor	- provision of Special	Construction site	Inspection of the	the whole construction	reduce the probability of	RD
	Clothes and protective		activities	period	accidents	
	means for the contractors					
	- Consistency with the rules					
	of exploitation of the					
	construction equipment and					
	usage of private safety					
	means					

# **Operation Phase**

A -4::4	What	Where	How	When	Why	Who
Activity	(Is the parameter to be monitored?)	(Is the parameter to be monitored?)	(Is the parameter to be monitored?)	(Define the frequency / or continuous?)	(Is the parameter being monitored?)	(Is responsible for monitoring?)
Cleaning road surface and shoulders from waste	Trash deposited from moving vehicles timely colleacted and removed;  Bodies of animals overrun by vehicles timely collected and removed	Carriageway and shoulders of the road section	Inspection	Quarterly	Prevent road littering; Road safety	Local municipality
Keeping road drainage system operational	Periodic cleaning of drainageditches from silt and trash	Drainage system long the road section	Inspection	Quarterly	Maintaining drainage system capacity for preventing road flooding and water damage	Local municipality
Confinement of accidental spills and clean-up	Timely confinement, deactivation, and removal of liquid or powder spills of cargo in case of road accidents	On the road and its immediate surroundings	Inspection	Upon occurenace of accidents, as required	Prevent pollution of soil and water	Traffic Police; Local municipality
Disposal of waste from regular road maintenance works	Collection and timely disposal of waste from maintenance works to the designated landfill	On the road and its immediate surroundings	Inspection	Towards completion of scheduled maintenance works	Prevent enviornment pollution	Local municipality

#### Attachment 1: Minutes of Public Consultation Meeting

Public Consultation Meeting at Chokhatauri on Environmental Management Plan for Rehabilitation works of Secondary and Local Roads II Project

Public consultation on Environmental Management Plan for the Rehabilitation of km4-km6 section of Chokhatauri-Bakhmaro road was held on 24 may 2012 at Chokhatauri Municipality. The goal of the public discussion was to inform the local communities about the purpose of the upcoming works, their timeline; temporary inconvenience expected from the construction works; and planned measures for mitigating the negative environmental impact.

Attendees had possibility to ask questions and express their opinion during the public discussion, so that their comments could have been considered in the final version of the Environmental Management Plan.

Local authorities and representatives of communities were attended the Public Consultation.

Mr. Otar Khatiashvili and Luisa Bubashvili informed attendees about the Environmental Management Plan of rehabilitation works under Secondary and Local Roads project.

Mr. Otar Khatiashvili opened the meeting and informed attendees about the roads construction on the territory of municipality, also was discussed the meaning of Secondary and Local Roads rehabilitation project for Georgian economic development.

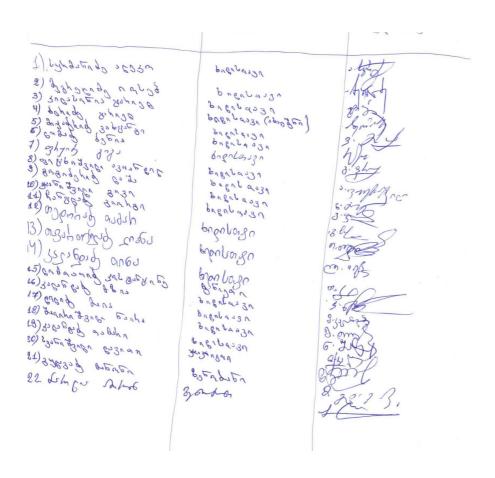
Mrs. Luisa Bubashvili made a presentation of Environmental Management Plan. She covered the scope of planned works, their possible impact on the natural environment and human health. Also was overviewed mitigation measures proposed to reduce negative environmental impacts of the project in the construction and operation phases.

Questions regarding technical side of the project were answered by Mr. Otar Khatiashvili.

All asked questions were answered by the staff of Roads Department of Georgia. Please find all questions and answers in the annex 1.

Deputy Chairman, Roads Departments of Georgia	(signed and sealed)
Staff of the Roads Department of Georgia:	
Otar Khatiashvili	(signed)
Luiza Bubashvili	(signed)

Author of Question/Comment	Contents of Question/Comment	Remarks
Chantladze Giorgi	Can population use the gravel left after the construction?	The material used in the process of the construction will be fully applied or moved to reserves after completion of the construction process. Population is not allowed to use the abovementioned materials
Lomtatidze Konstantine	What will be the benefit of the population in terms of employment?	The local population will benefit from preference if they possess the relevant qualification and in case non-qualified workers are hired.
Shatirishvili Naira	Who was agreed with the location of the construction camps?	Location of the construction camps will be agreed with the local self-governance organs.



## Attachment 2: Permits and Agreements

# Letter from Gzamsheni-18 Ltd. on the Purchase of Asphalt-Concrete Material and Recycling of Construction Waste

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3500 ქ. თზურგეთი, თაცაიშვილის ქ. №62 🕿 (496) 27-58-40; 599 55 35 51 62 takaishvili, Ozurgeti, Georgia, 3500; phone (496) 27-58-40; mobile 599 55 35 51

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29 5m 18h, 20128.

საქართველოს საავტომობილო გზების დეპარტამენტის თავმჯდომარის პირველ მოადგილეს ბატონ ნუგზარ გასვიანს

გატონო ნუგზარ,

გაცნობებთ, რომ შ.პ.ს."გზამშენი-18" 10.05.2012 წლის NSLRPII/CW/NCB-02
ხელშეკრულებით აწარმოებს შიდასახელმწიფოებრივი მნიშვნელობის ჩოხატაურიბახმაროს საავტომობილო გზის კმ4-კმ6 მონაკვეთის რეაბილიტაციის სამუშაოებს.
აღნიშნული სამუშაოებისთვის ასფალტობეტონს ვციღულობთ შ.პ.ს."კომპანია
ბლექ სი გრუპი"-ს ოზურგეთის ასფალტობეტონის ქარხნიდან, ხოლო ნაგავსაყრელით არ გვისარგებლია, რადგან ფრეზირებული ასფალტობეტონის მასა
ჯერ დასაწყობებული იქნა ადგილზე, შემდეგ კი გატანილი იქნა გზების
შესაკეთებლად.

ასევე წარმოგიდგენთ ზემოთ აღნიშნულ ობიექტზე გამოყენებულ მდ.სუფსას ქვიშა-ხრეშის კარიერის №100159 ლიცენზიის ქსეროასლს (ოზურგეთის რაიონი სოფ.ნაგომარი).

პატივისცემით

შ.პ.ს. "გზამშენი-18"-ს დირექტორი:

/m. %sb3s/

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