Environmental Management Plan

for

rehabilitation of secondary road

Chalaubani-Signagi-Anaga

km 16 - km 22

Tbilisi, Georgia
July 2012
PART 1: GENERAL PROJECT AND SITE INFORMATION

INSTITUTIONAL & ADMINISTRATIVE

<table>
<thead>
<tr>
<th>Country</th>
<th>Georgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project title</td>
<td>Rehabilitation of secondary road Chalaubani-Signagi-Anaga km 16 - km 22</td>
</tr>
</tbody>
</table>

**Scope of project and activity**
The existing road pavement of the design section is represented as a damaged asphalt concrete (the main damage type is “alligator” cracks, potholes, settled areas, damages edges), longitudinal and cross parameters are violated.

There is one bridge located at the section that is in fair condition.

The design road is crossed by 9 culverts of different lengths, 2 of which need replacement and 7 has to be rehabilitated.

The ditches are to be arranged along the road, and the existing road side ditches need cleaning and upgrading to function.

Some technical characteristics of the existing road are as follows:
- Roadway width 5-9 m
- Carriageway width 5 m
- Shoulder width 0-2 m.

The design alignment follows the existing route. Aiming at avoiding the encroachment upon the property or land occupation, the transitional curves are designed for the densely populated areas improving the safety and traffic comfort.

**Institutional arrangements (Name and contacts)**

<table>
<thead>
<tr>
<th>WB (Project Team Leader)</th>
<th>Joseph Melitauri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>Giorgi Tsereteli</td>
</tr>
<tr>
<td>RDMRDI</td>
<td>Signagi Municipality</td>
</tr>
</tbody>
</table>

**Implementation arrangements (Name and contacts)**

| Safeguard Supervision WB        | Darejan Kapanadze              |
| Local Counterpart Supervision   | RRMSD Ltd.                     |
| Local Inspectorate Supervision  | -                              |
| Contractor                      | Caucasavtomagistrali           |

SITE DESCRIPTION

**Name of site**
Rehabilitation of secondary road Chalaubani-Signagi-Anaga 16Km-22Km, Kakheti Region, Signagi Municipality

**Describe site location**
The project is located in the East Georgia. Rehabilitation of Chalaubani-Signagi-Anaga section starts at km 16 and ends at km22 (which passes Signagi). The section starts at the end of the territory of Signagi at the left side of Alazani Valley and is located along the heavily populated Signagi territory. It ends at the village Anaga. The total length of the road section to be rehabilitated is 6437 m. km which goes along the left side of the Alazani Valley in Kakheti.

**Who owns the land?**
Signagi Municipality

**Description of geographic, physical, biological, geological, hydrographic and socio-economic context**

- **Location** - The project section is located in the Signagi district, it starts at Signagi Gates and joins Tbilisi-Bakurtsikhe-Lagodekhi International road as a right junction. Road serves as a connection to the touristic city museum.
- **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 where 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.
| **LEGISLATION** | 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, (i) works contractor must be licensed, (ii) construction materials must be obtained from licensed providers, (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, (iv) if contractor wishes to operate own asphalt or concrete plant (rather than purchasing these materials from other providers), then the contractor must obtain an environmental permit with an established ceiling of pollutant concentrations in emissions, (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** | Environmental Management Framework for the Secondary and Local Roads Improvement 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 was disclosed through the same media and delivered in hard copies to the municipality of Signagi. Consultation meeting with local communities was held on |
| **INSTITUTIONAL CAPACITY BUILDING** | [x] N or [ ] Y |
### ENVIRONMENTAL /SOCIAL SCREENING FOR SAFEGUARDS TRIGGERS

<table>
<thead>
<tr>
<th>Activity/Issue</th>
<th>Status</th>
<th>Triggered Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Roads rehabilitation</td>
<td>[x] Yes [ ] No</td>
<td>If “Yes”, see Section A below</td>
</tr>
<tr>
<td>B. New construction of small traffic infrastructure</td>
<td>[ ] Yes [x] No</td>
<td>If “Yes”, see Section A below</td>
</tr>
<tr>
<td>C. Impacts on surface drainage system</td>
<td>[x] Yes [ ] No</td>
<td>If “Yes”, see Section B below</td>
</tr>
<tr>
<td>D. Historic building(s) and districts</td>
<td>[ ] Yes [x] No</td>
<td>If “Yes”, see Section C below</td>
</tr>
<tr>
<td>E. Acquisition of land¹</td>
<td>[ ] Yes [x] No</td>
<td>If “Yes”, see Section D below</td>
</tr>
<tr>
<td>F. Hazardous or toxic materials²</td>
<td>[ ] Yes [x] No</td>
<td>If “Yes”, see Section E below</td>
</tr>
<tr>
<td>G. Impacts on forests and/or protected areas</td>
<td>[ ] Yes [x] No</td>
<td>If “Yes”, see Section F below</td>
</tr>
<tr>
<td>H. Risk of unexploded ordinance (UXO)</td>
<td>[ ] Yes [x] No</td>
<td>If “Yes”, see Section G below</td>
</tr>
<tr>
<td>I. Traffic and Pedestrian Safety</td>
<td>[x] Yes [ ] No</td>
<td>If “Yes”, see Section H below</td>
</tr>
</tbody>
</table>
## PART 3: MITIGATION MEASURES

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES CHECKLIST</th>
</tr>
</thead>
</table>
| **0. General Conditions** | Notification and Worker Safety | (a) The local construction and environment inspectorates and communities have been notified of upcoming activities  
(b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works)  
(c) All legally required permits have been acquired for construction and/or rehabilitation  
(d) The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.  
(e) Workers’ PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots)  
(f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. |
| **A. General Rehabilitation and/or Construction Activities** | Air Quality | (a) During excavation works dust control measures shall be employed, e.g. by spraying and moistening the ground  
(b) Demolition debris, excavated soil and aggregates shall be kept in controlled area and sprayed with water mist to reduce debris dust  
(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  
(d) The surrounding environment (sidewalks, roads) shall be kept free of soil and debris to minimize dust  
(e) There will be no open burning of construction / waste material at the site  
(f) All machinery will be well maintained and serviced and there will be no excessive idling of construction vehicles at sites |
| | Noise | (a) Construction noise will be limited to restricted times agreed to in the permit  
(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible |
| | 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 | (a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from excavation, demolition and construction activities.  
(b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers.  
(c) Construction waste will be collected and disposed properly into formally agreed upon locations.  
(d) Whenever feasible Contractor will reuse and recycle appropriate and viable materials (except when containing asbestos) |
| **B. Impacts on surface drainage system** | Water Quality | (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.  
(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.  
(c) There will be procedures for prevention of and response to accidental spills of fuels, lubricants and other toxic or noxious substances.  
(d) Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies, |
<table>
<thead>
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</table>
| C. Historic building(s) | Cultural Heritage | (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.  
(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. |
| D. Acquisition of land | Land Acquisition Plan/Framework | (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.  
(d) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented |
| 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 the asbestos will be appropriately contained and sealed to minimize exposure  
(c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust  
(d) Asbestos will be handled and disposed by skilled & experienced professionals  
(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.  
(f) The removed asbestos will not be reused |
| F. Affected forests, wetlands and/or protected areas | Ecosystem protection | (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.  
(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  
(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  
(d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas |
| G. 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 | (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  
▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards  
▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes.  
▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement  
▪ If required, active traffic management by trained and visible staff at the site for safe passage for the public  
▪ Ensuring safe and continuous access to all adjacent office facilities, shops and residences during construction |
## PART 4: MONITORING PLAN

### Construction Phase

<table>
<thead>
<tr>
<th>Activity</th>
<th>What (Is the parameter to be monitored?)</th>
<th>Where (Is the parameter to be monitored?)</th>
<th>How (Is the parameter to be monitored?)</th>
<th>When (Define the frequency / or continuous?)</th>
<th>Why (Is the parameter being monitored?)</th>
<th>Who (Is responsible for monitoring?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply of construction materials</td>
<td>Purchase of the construction materials from licensed providers</td>
<td>Offices and warehouses of material suppliers, and borrowing sites</td>
<td>Checking documents; Inspection of material quality</td>
<td>In the process of signing the agreements for material provision</td>
<td>Ensure technical quality of construction; Protect human health and environment</td>
<td>Roads Department (RD)</td>
</tr>
<tr>
<td>Transportation of construction materials and waste</td>
<td>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.</td>
<td>Routes for transportation of construction materials and construction wastes</td>
<td>Inspection of roads adjacent to the construction site and included in the agreed-upon routes of transportation</td>
<td>Unannounced checks during the working hours</td>
<td>Avoid air and road pollution eith dust and solid matter; Reduce traffic disruption</td>
<td>RD; Traffic Police</td>
</tr>
<tr>
<td>Operation of Construction machinery on site</td>
<td>Proper technical condition of construction machinery: • no excessive exhaust, • no fuel leakage, • respect of working hours</td>
<td>Construction site</td>
<td>Inspection</td>
<td>Within and off working hours</td>
<td>Reduce air and soil pollution caused by equipment operation; Reduce noise and dust nuisance to local population</td>
<td>RD</td>
</tr>
<tr>
<td>Servicing of construction machinery</td>
<td>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 space for holding fuel over the maximum amount expected on the location at a time, • emergency fire-fighting kit, • sedimentation pool at car wash area.</td>
<td>Construction site and construction base (if applicable)</td>
<td>Inspection</td>
<td>Entire period of machinery operation</td>
<td>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</td>
<td>RD</td>
</tr>
</tbody>
</table>

| 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 Clothes and protective means for the contractors  
Consistency with the rules of exploitation of the construction equipment and usage of private safety means | Construction site | Inspection of the activities | the whole construction period | reduce the probability of accidents | RD |
### Operation Phase

<table>
<thead>
<tr>
<th>Activity</th>
<th>What</th>
<th>Where</th>
<th>How</th>
<th>When</th>
<th>Why</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning road surface and shoulders from waste</td>
<td>Trash deposited from moving vehicles timely collected and removed; Bodies of animals overrun by vehicles timely collected and removed</td>
<td>Carriageway and shoulders of the road section</td>
<td>Inspection</td>
<td>Quarterly</td>
<td>Prevent road littering; Road safety</td>
<td>Local municipality</td>
</tr>
<tr>
<td>Keeping road drainage system operational</td>
<td>Periodic cleaning of drainageditches from silt and trash</td>
<td>Drainage system long the road section</td>
<td>Inspection</td>
<td>Quarterly</td>
<td>Maintaining drainage system capacity for preventing road flooding and water damage</td>
<td>Local municipality</td>
</tr>
<tr>
<td>Confinement of accidental spills and clean-up</td>
<td>Timely confinement, deactivation, and removal of liquid or powder spills of cargo in case of road accidents</td>
<td>On the road and its immediate surroundings</td>
<td>Inspection</td>
<td>Upon occurence of accidents, as required</td>
<td>Prevent pollution of soil and water</td>
<td>Traffic Police; Local municipality</td>
</tr>
<tr>
<td>Disposal of waste from regular road maintenance works</td>
<td>Collection and timely disposal of waste from maintenance works to the designated landfill</td>
<td>On the road and its immediate surroundings</td>
<td>Inspection</td>
<td>Towards completion of scheduled maintenance works</td>
<td>Prevent environment pollution</td>
<td>Local municipality</td>
</tr>
</tbody>
</table>
Public consultation on Environmental Management Plan for the Rehabilitation of secondary road Chalaubani-Signagi-Anaga km 16 - km 22 was held on 3 August 2012 at Lamiskana 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.

Attendees:

<table>
<thead>
<tr>
<th>Name</th>
<th>Name of Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otar Khatiashvili</td>
<td>Roads Department of Georgia</td>
</tr>
<tr>
<td>Luiza Bubashvili</td>
<td>Roads Department of Georgia</td>
</tr>
</tbody>
</table>
The public meeting was attended by the population of the village Anaga (see attachment).

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.

the technical side of the project was presented by Mr. Otar Khatiashvili
see attachment

Irakli Litanishvili
Deputy Chairman, Roads Departments of Georgia (signed and sealed)

Staff of the Roads Department of Georgia:

Otar Khatiashvili (signed)

Luisa Bubashvili (signed)
სოფლის მუნიციპალიტეტის შინაგან
SIGHNAGHI MUNICIPALITY DEPARTMENT

№ 1671

27. 09. 2013

ბ. ბ. „სოფლის მუნიციპალიტეტის შინაგან“ ჩ. გ. ს. მ.

სალოგიზო დავალება 26.09.2013 წლის № 1775 ფაქტის საფუძვლებზე მიუხედავად, რომ მაღალებში-ხელში ანგარიშზე მიმდინარეობს მინიჭებული თანამშრომლოვანი ჯგუფი სარგებლობის დროს 16-21 ღამაზე სარგებლობის საშუალო შთამონაცვლეობის მიღწევაში ისპარძობოდა და უკვე გამოიყენებოდა დანიშნავი, ჩვენი განცხადებაში. ჩვენი განცხადებაში რამდენიმე გარემო იყო აქვთ თავი არსებობს ეგზამინობით სამართალი მიზნით.

მუნიციპალიტეტი, სალოგიზო დავალება გამოაცხადა რომ სარგებლობის შთამონაცვლეობით.

[サイン]

[სახელი და ფორმატი]
Attachment 3. Licenses for Extraction of Natural Construction Material