

# Environmental Monitoring Report

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# 2 Semestral Report  
January 2014

## GEO: Sustainable Urban Transport Investment Program – Tranche 1

Prepared by the Municipal Development Fund of Georgia for the Government of Georgia and  
the Asian Development Bank.

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# Biannual Environmental Monitoring Report

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Project Number: 2655-GEO (SF)  
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## GEORGIA: GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM - Tranche 1

(Financed by the Asian Development Bank)

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### ABBREVIATIONS

ADB	Asian Development Bank
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
EIP	Environmental Impact Permit
EMP	Environmental Management Plan
EPSM	Engineering Procurement and Construction Management
GoG	Government of Georgia
SUTIP	Georgian Sustainable Urban Transport Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund
MFF	Multi-tranche Financing Facility
MoENRP	Ministry of Environmental and Natural Resources Protection
MoRDI	Ministry of Regional Development & Infrastructure

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## 1. INTRODUCTION

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Upgrading and improvement of local transport and transport-related infrastructure plays a significant role in the development of Georgia infrastructure. To this effect a number of important activities have been implemented and financed from the budget of Georgia and from other sources. Development of transport and related infrastructure plays an important role in improvement of Georgia's urban infrastructure. Recently several significant programs, financed through state budget, loans and grants, have been implemented with this regard. Notwithstanding the efforts undertaken so far several problems need to be solved regarding development of transport infrastructure.

Sustainable Urban Transport Investment program tranche 1 include several projects in the different municipalities of Georgia. Program aims efficient, reliable and affordable urban infrastructure development and service improvement. In effect, urban transport service will be improved, and the level of different types of public and social services will be increased.

Sustainable Urban Transport Investment program tranche 1 include the following subprojects:

### **Civil works subprojects under Tranche 1:**

- Tbilisi Metro extension;
- Mestia road improvement;
- Anaklia Coastal improvement (Phase 1);

### **Consulting services under Tranche 1:**

- Tbilisi Metro Line 2 and Creation of University Station EPCM;
- Mestia road improvement construction supervision;
- Anaklia coastal improvement EPCM (Phase 1 and Phase 2);
- Rustavi-Tbilisi urban link (Section 1, 2, 3) EPCM;
- Batumi coastal improvement alternative feasibility study.

The environment classification for tranche is Environmental Category B, as all subprojects under SUTIP 1 were classified as category B which will not have significant irreversible or permanent negative environmental impacts during or after construction and requires preparation of Initial Environmental Examination (IEE). The environmental categorization of subprojects was conducted using ADB's Safeguard Policy Statement (2009). Required environmental assessments of SPs are conducted and IEEs are prepared in accordance with Environmental Assessment and Review Framework approved for SUTIP 1 in May, 2010.

### 1.1 Construction activities and project progress during the reporting period

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#### **Civil works subprojects under Tranche 1**

**Tbilisi Metro extension** subproject has not been started yet.

The works within the **Mestia road improvement sub project** were completed and handed over in October 2011 (for lots 1 and 4) and in December, 2012 (for Lot 2 and 3). For road section 1 (74-80 km of Zugdidi-Mestia motorway), section 2 (construction of a new tunnel at 89 km) and section 4 (121-125 km) defects liability period was finalized and the certificates on the expiry of

defects liability period was issued on 25.10.12, 07.02.13 and 31.05.13 respectively. For section 3 (91-103 km) defects liability period was extended until June 1, 2013 and the end of defects liability certificate was issued June 14, 2013.

Works for the execution of **Anaklia Coastal improvement (Phase 1) subproject** commenced on July 24th, 2013. For the end of December, 2013 the basic parts of preliminary works are finished when in case of convenient weather condition will allow beginning of excavation works in the sea. At this stage temporary jetty, access road and working yard are ready for the beginning of basic works. Starting of installation of underwater breakwater is delayed because of storm and swelling in the sea. Since starting of construction works 2478 units of 5 tone and 80 units of 10 tone tetra pods.

### **Consulting services under Tranche 1**

Initial Environmental Examination for the **Tbilisi Metro Line 2 and Creation of University Station subproject** have been finalized and submitted to the ADB for comments. Draft design of the project is finalized. Final version of the project design is under preparation taking into account comments of Tbilisi Transportation Company.

The defects liability and final completion report of the **Mestia road improvement construction supervision subproject** was submitted by the supervisory company - Joint Venture of Kocks Consult GmbH (Germany), DMEC Seoul (Korea) and Design & Consulting Company "BT" (Georgia) on July, 2013. Environmental Compliance Audit (ECA) of the subproject was conducted in September, 2013 by external expert (Environmental Compliance Audit report is attached, see chapter 3.2 for more details).

IEE for the **Anaklia Coastal Improvement subproject (Phase 2)** have been finalized, agreed with ADB and disclosed on MDF web-site: (<http://mdf.org.ge/category/documents/>). Design of the sub project has been submitted to ADB for comments. An International Consultant Company - DOHWA Engineering Co., Ltd hired by MDF for construction supervision of **Anaklia coastal improvement sub project (phase 1)**, undertakes environmental monitoring of project progress and submits quarterly Environmental Monitoring Report to MDF.

IEE/EIA reports for **Rustavi-Tbilisi urban link (section 1 and 3)** were prepared in 2011. In accordance with Georgia legislation conclusion of the Ecological Examination was issued by the MoENRP in March, 2013. The conditions of the Conclusion on Ecological Examination are an integral part of the Construction Permit for the sub project and some of them should be met before starting of construction works. Contractor Company is selected; however contract has not been signed yet. IEE report for **Rustavi-Tbilisi urban link (section 2)** was finalized in August, 2013, agreed with ADB and disclosed on MDF web-site (<http://mdf.org.ge/category/documents/>). Public hearing of IEE report was organized by MDF on August 17<sup>th</sup>, 2013. Minutes of the public hearing is included in the published version of IEE report. ToR for the vibration impact study have been elaborated and sent to ADB for comments. EIA report will be prepared by consultant in accordance with Georgian legislation, public hearing will be arranged and documentation will be submitted to the MoENRP in for ecological examination. Design of the project has been updated in accordance of international expert comments. Updated design of the project will be submitted to ADB after expertise of the project by external company.

### 1.2 Changes in Project Organization and Environmental Management Team

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A deep institutional reform is being undertaken in the MDF at present. Environmental Safeguards Unit with composition of four specialists will be formed within the Projects Assessment Service. In addition one environmental monitoring specialist will be member of Projects Monitoring Service.

## 2. ENVIRONMENTAL MONITORING

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During reporting period construction works were implemented only within of **Anaklia coastal improvement sub project (phase 1)**. Therefore the paragraphs below include information related to the said SP.

Within the reporting period, no adverse environmental impacts related to the works were noted or observed. SEMP is elaborated by contractor and submitted to MDF. Construction materials (sand and stones) are obtaining only from licensed companies.

### **Air Quality**

Trucks carrying construction materials are covered. Special equipment has been installed at the concrete plant to reduce dust emission while loading of cement.

### **Sea Water quality**

Taking into consideration the fact that main marine works according to the project have not been started yet, sea water quality disturbance is not happening at this moment. Vehicles fueling place is located approximately 300 m far from sea shore, adequate lining of the ground by concrete and confinement of possible operation and emergency spills are provided.

### **Noise**

The plan of transportation routes and timing were agreed with local Municipality. Drivers were informed to limit speed to 20-25 km/h and to avoid use of horn in the town. Local population was informed about project works. No nighttime activities, related with providing construction material from the quarries, took place. According to the works schedule, not more than 5-6 trucks were working at the same time and the noise created from them were not exceeding the limitation.

### **Flora and Fauna**

Project activities have limited impact on migratory birds. However, the contractor is requested to conduct consultation with qualified experts on mitigation measures to be implemented while wintering and spring migration periods. Taking into consideration that the marine construction activities have not been started yet, the impact on sea biodiversity is not happening yet.

### **Waste**

Construction waste is almost not produced. Mineral construction waste (inert materials) is used by contractor for secondary meanings. Regarding the hazardous waste, such as oil



contaminated towels or oil contaminated soil, Contractor is accumulating them separately in special containers. Contractor has provided relevant contract with licensed company on final disposal of hazardous waste.

### **Construction Safety**

Construction activities are performed according to the construction safety requirements and regulations. Workers are using personal protection equipment. The project area is fenced and warning signs are placed. Training and instructions on environmental and safety issues was provided to workers.

## **3. ENVIRONMENTAL MANAGEMENT**

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### **3.1 Environmental management system**

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At present MDF environmental specialist carries out quarterly on-site monitoring of ongoing SP to check environmental compliance of construction works and effectiveness of supervisory company's activities. Records of on-site environmental monitoring are kept at MDF.

An International Consultant Company - DOHWA Engineering Co., Ltd hired by MDF for construction supervision of Anaklia coastal improvement sub project (phase 1), undertakes environmental monitoring of project progress and submits quarterly Environmental Monitoring Report to MDF. The same International Company will provide consultants' services of supervision (including environmental compliances) of the Modernization of Tbilisi-RusTavi Section of the Tbilisi-Red bridge (Azerbaijani Boarder) road.

All mitigation measures during pre- and construction phases of SPs are implemented by construction contractors. IEEs including EMPs are integral parts of the contracts and their implementation is mandatory for contactors.

Contractor of the Anaklia coastal improvement (phase I) sub project submits monthly progress reports to supervisor and MDF which includes chapter on environmental performance. The construction contractor has been employed Environmental consultant responsible for implementation of EMP, daily environmental monitoring and reporting. SEMP have been elaborated by contractor and submitted to MDF.

### **3.2 Site inspections and audits**

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#### **Environmental Compliance Audit of the Mestia road improvement sub project**

Environmental Compliance Audit (ECA) of the Mestia road improvement sub project was conducted in September, 2013 by external expert (Environmental Compliance Audit report is attached). The objective of ECA was to ascertain whether appropriate care had been exercised throughout the construction phase in order to prevent or minimize environmental pollution and/or damage.

The following environmental non-compliances have been revealed by the ECA:

1. None of the Construction Contractors have developed the required environmental plans. However Construction Contractors accomplished the environmental protection actions in line with Environmental Management Plan” and “Monitoring Plan” (approved by the Ministry of Environment and Natural Resources of Georgia and Asian Development Bank) included in the EIA document. The said Plans surely include a major part of the required environmental plans mentioned above, but fail to fully meet the requirements developed for such a complex object quite expediently.

**Comment:** Despite the said fact the activities of all four Construction Contractors in the environmental protection field can be estimated as satisfactory by the results of the inspection and monitoring conducted by the Project Consultant and MDF. The MDF will strictly require the contractors to prepare required environmental plans, monthly environmental reports, inspect environmental activity and make internal audit records in the course of the next project.

2. Auxiliary buildings on the territories of construction camp in Jorkvali (KP 80) and inert material borrow pit area (KP 82) are not dismantled, the concrete foundations of some auxiliary buildings are remained, and there are concrete mixers and minor broken-down techniques on the territory of construction camp.

**Comment:** The premises and facilities are not functioning for this moment and surrounding areas are not polluted or damage throughout them. Owners intend to transfer facilities in near future.

### **Environmental Inspections of Anaklia coastal improvement sub project, Phase 1**

After starting of construction works the project site have been visited twice (on August 30 and November 15, 2013) by the MDF environmental specialists to check environmental compliance of construction works and effectiveness of supervisory company’s activities. Special checklist for site visit has been elaborated. Filled checklist is signed by MDF environmental specialist, construction supervision consultant and construction contractor representatives. Main non-compliances revealed during site visits are as following:

- The required documentation like: agreements with licensed companies on providing construction materials were not obtained;
- Emergency response plan was not elaborated;
- The written agreement on final disposal of construction waste from local municipality was not obtained.
- There were small amount of waste on the project area which should be removed regularly.
- Training and instructions on environmental and safety issues was not provided to workers.

During the reporting period major part of revealed non-compliances have been corrected:

- Agreement with licensed companies on providing construction materials submitted to MDF;
- Zugdidi municipality administration has allocated site for final disposal of construction waste;
- Agreement with licensed company on final disposal of hazardous waste has been submitted to MDF.
- Emergency response plan have been elaborated and submitted, however quality of the document should be improved, and relevant comments have been sent to contractor.
- Results of chemical analysis of sea water and air quality have been submitted to MDF.

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- SEMP has been elaborated and submitted to MDF. However SEMP and quality of environmental performance chapter of monthly progress reports need to be improved. Relevant comments and recommendations are sent to contractor.

No consultations with local communities were conducted during the reporting period.  
No complaints were received during the reporting period.

ANNEXES

Annex 1. Pictures of Anaklia coastal improvement subproject (phase 1) site





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## Annex 2. Implementation report on the **Anaklia coastal improvement sub project, Phase 1 IEE** mitigation requirements

Reference		Proposed Mitigation Measure	Action to date	Action required/comment
Possible removal of terrestrial habitat during site preparation		Sites rehabilitated before contractor leaves site upon completion of construction activities. Planting and stabilization of site, including replacement of any native plant species	N/A for reporting period	
Excavation and placing tetrapods	Water turbidity	Protocols for routine equipment inspection repair, maintenance, and fueling will be required before the start of work, and practices during work must be documented. Contingency plans to be used in the event of spills will also be required beforehand, and spill containment and clean-up equipment must be present during all fueling and fluid replacement or top-up activities. Vessels and equipment should be fueled at shore mooring locations where spill containment equipment is present before the start of fueling	Vehicles fueling place is located approximately 200 m far from sea shore, adequate lining of the ground by concrete and confinement of possible operation and emergency spills are provided. Contingency plan is drafted.	Comments to improve contingency plan have been sent to contractor.
	Sediment dispersal	The suspension of sediments will be minimized to the extent that the powerful section pumps on the dredgers are able to suck up those materials out of the water column.	Marine works are not started yet.	
	Water Contamination	Contractor should fail to clean up any oil based products in or near the waterways the Engineer's Representative may order third parties to do so and all costs associated with the same will be deducted from other monies due to the Contractor.  During underwater breakwater work it is encouraged to make use of materials available in the local for the construction. Imported materials must have sufficient import procedures and certificate of quality issued by the manufacturer.	Fuel and lubricants are stored 200 meters far from sea shore. Repairing works of equipments is not allowed near the sea shore.  Special container is allocated for hazardous waste such as oil contaminated towels or machine components. Contractor has provided relevant contract with licensed company on final disposal of hazardous waste.	
Beach artificial nourishment	Dust	Periodically water down excess roads on site; Cover trucks carrying sand; Wet or cover trucks carrying sand; Halting work during excessive onshore winds; Immediately replacing defective equipment and removing it from the work site.	N/A for reporting period as beach artificial nourishment works are nor started yet.	
	Contamination of resort area	Sand from carriers to be placed along the proposed beach nourishment areas must incorporate a sampling and analysis program to identify the concentrations of		

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		potential contaminants		
General construction activities	Workers health and safety	The construction contractor shall develop an HS Management Plan and install an HS Management System for the construction phase Including training of workers.	Construction activities are performed according to the construction safety requirements and regulations. Workers are using personal protection equipment. The project area is fenced and warning signs are placed. Training and instructions on environmental and safety issues was provided to workers by supervisor consultant on September 6, 2013. Trainings for trench excavation works was provided by contractor in December, 2013.	
	Producing of waste	While disposal wastes both on the sites and at the temporary storage facilities the following requirements are to meet: Place of disposal of the waste concerned must be enclosed. The waste must not have access to drainage water. Waste must be immediately removed from the working sites. Waste must be placed in secondary protective basins. This waste can be transferred only to a certified contractor.	Construction waste is almost not produced. Mineral construction waste (inert materials) is used by contractor for secondary meanings. Regarding the hazardous waste, such as oil contaminated towels or oil contaminated soil, Contractor is accumulating them separately in special containers. Contractor has provided relevant contract with licensed company on final disposal of hazardous waste.	There is small amount of waste on project area. Contractor is notified to remove waste regularly.
General construction activities	Disruption of migratory bird species during autumn migration and wintering.	Neither of breeding (nesting) area on beforehand definite distance should not be damaged or disturb without survey by experts and allowances of MOEPNR	Project activities have limited impact on migratory birds. However, the contractor is requested to conduct consultation with qualified experts on mitigation measures to be implemented while wintering and spring migration periods. Taking into consideration that the marine construction activities have not been started yet, the impact on sea biodiversity is not happening yet.	
Delivery construction materials and sand	Noise and Dust and Emissions of Harmful Substances into the Atmosphere Air	Require adherence to engine maintenance schedules and standards to reduce air pollution; Use of defined, well planned haulage routes and reductions in vehicle speed where required; Periodically water down excess roads on site; Cover trucks carrying cement, gravel, sand or other loose materials; Wet or cover trucks carrying stone/ sand/ gravel;	Trucks carrying construction materials are covered. Special equipment has been installed at the concrete plant to reduce dust emission while loading of cement.  The plan of transportation routes and timing were agreed with local Municipality.	

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		<p>Haul materials to and from the site in off peak traffic hours;          Halting work during excessive onshore winds;          Immediately replacing defective equipment and removing it from the work site;          No truck movements in inhabited areas between 22:00 and 6:00.</p>	<p>Drivers were informed to limit speed to 20-25 km/h and to avoid use of horn in the town. Local population was informed about project works. No nighttime activities, related with providing construction material from the quarries, took place. According to the works schedule, not more than 5-6 trucks were working at the same time and the noise created from them were not exceeding the limitation.</p>	
<p><b>Operation stage</b>           Beach artificial nourishment</p>	<p>Dust into the Atmosphere</p>	<p>Periodically water down excess roads on site;          Cover trucks carrying sand;          Wet or cover trucks carrying sand;          Halting work during excessive onshore winds;          Immediately replacing defective equipment and removing it from the work site.</p>	<p>N/A for reporting period as beach artificial nourishment works are nor started yet.</p>	
<p>Delivery sand</p>	<p>Noise and Dust and Emissions of Harmful Substances into the Atmosphere          Air</p>	<p>Require adherence to engine maintenance schedules and standards to reduce air pollution;          Use of defined, well planned haulage routes and reductions in vehicle speed where required;          Periodically water down excess roads on site;          Cover trucks carrying cement, gravel, sand or other loose materials;          Wet or cover trucks carrying stone/ sand/ gravel;          Haul materials to and from the site in off peak traffic hours;          Halting work during excessive onshore winds;          Immediately replacing defective equipment and removing it from the work site;          No truck movements in inhabited Areas between 22:00 and 6:00.</p>	<p>N/A for reporting period as beach artificial nourishment works are nor started yet.</p>	