

# Environmental Monitoring Report

**Ninth Semestral Report**  
**Reporting period: July - December 2021**  
**February 2022**

## **GEORGIA: GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM - Tranche 4**

**(Financed by the Asian Development Bank)**

**Prepared by:** Municipal Development Fund of Georgia (MDF) for the Asian Development Bank  
Tbilisi, Georgia

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generally implemented in accordance with SEMP, IEE and EIA requirements. 22

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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	Sustainable Urban Transport Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund of Georgia
MFF	Multi-tranche Financing Facility
MEPA	Ministry of Environmental Protection and Agriculture
MoRDI	Ministry of Regional Development & Infrastructure
SSEMP	Site-Specific Environmental Management Plan

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## 1 INTRODUCTION

### 1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM – TRANCHE 4 – **Batumi Coastal Protection project**. Contract No: P42414-SUTIP4-ICB-01-2016 and Amendment N2, N3.
2. This report is the ninth (9<sup>th</sup>) EMR for the project, since the 2017.

### 1.2 Headline Information

3. Black Sea coast playing a significant role in economics of Georgia, cultural and tourist development as well. Coastal improvement is one of the priorities among other infrastructural projects, which will facilitate the future development of the City Batumi and Adjara region. 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. Recently several significant programs, financed through state budget, loans and grants, have been implemented with this regard.
4. The Sustainable Urban Transport Investment Program (SUTIP) is financed by ADB under a multi tranche financing facility (MFF), and is aimed at promoting a sustainable, integrated, socially-affordable and cost-efficient urban transport system in cities of Georgia, to energize the economy and improve the quality of life of citizens. Projects involve rehabilitation and repair of existing infrastructure, provision of new facilities and capacity building.
5. SUTIP - Tranche 4 was developed as the government's response to the transportation problems in urban areas, which include large traffic volumes causing increasing delays, as a result of previous under-investment in infrastructure maintenance and expansion. Tranche 4 was signed on 26 October 2015, and declared effective on 8 January 2016. Inception Mission was fielded on 26 January to 9 February 2016. Batumi coastal protection works contract was awarded in December 2016, and project implementation is ongoing.
6. SUTIP - Tranche 4 comprises (i) urban infrastructure improvement, including one subproject: Batumi Coastal Protection; (ii) institutional strengthening, including management information system for MDF; and (iii) project management facility, including incremental administration and consulting services for audit, safeguards monitoring, and feasibility studies and detailed engineering design for sustainable urban transport projects. The government, through the Ministry of Finance, has submitted on 15 April 2015 the periodic financing request for Tranche 4, requesting a loan of \$20 million from ADB's ordinary capital resources. These investments will improve the urban environment, strengthen economic and tourism development, and regional integration.
7. The Municipal Development Fund of Georgia (MDF) is the executing agency of the program, and is responsible for the general coordination and implementation of projects, for negotiating with ADB and with appropriate ministries and agencies of the Borrower. MDF is directly responsible for planning, designing, civil works on construction and rehabilitation of all subprojects in the frame of program.

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## 2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

### 2.1 Project Description

8. Coastal improvement is one of the priorities among other infrastructural projects, which will facilitate the future development of the Batumi City and region. The proposed project is aimed at protecting the Batumi coast against erosion, which is affecting the coastline southwest of Batumi, over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue and as a consequence the investment climate for tourism development could be negatively influenced.
9. The main objective of the proposed project is to protect the Batumi coast against erosion. The coastline southwest of Batumi is affected by erosion over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue at the airport area and at Adlia (village south of Batumi) and might even affect the beaches and the coastline of Batumi. As a consequence, the investment climate for tourism development could be negatively influenced.
10. The evaluation of the alternatives to protect the coast against the erosion affecting the southern section of the littoral has shown that a soft intervention, featuring recirculation of the sediment between the northern section of the littoral (where it accumulates due to natural transport pattern) and the southern portion (from where it is removed due to erosion), is the most efficient way to protect and restore the beach.
11. Therefore, the main intervention aiming at stabilizing this portion of the Batumi coastline features artificial nourishment in the southern portion of the littoral, just north of the airport, spread over a beach length of approximately 2,000 m, using material taken from the northern part of the coastline (where beach accretion is occurring).
12. The interventions for the protection of the coast under the project are listed here below:
  - Beach nourishment of the eroded sediment along the coast for about 1,680m, in the southern beach (approx. 120,000 m<sup>3</sup>);
  - Adapting the revetment to the existing local conditions for 1,750m;
  - Safeguard of greenery and boulevard for about 1,750m;
  - Yearly possible nourishment maintenance (50,000m<sup>3</sup>);
  - A Chorokhi river monitoring program providing the information needed to analyze the morphology and hydrology of the Chorokhi river and to study the shape of river mouth that could increase the deposit of the sediment from the river towards north and that could minimize the loss in the canyon of the sediments transported by the river.
13. For transportation of sediments, contractor selected and acquired respective equipment (hydraulic and booster pumps, pipes) and brought to Batumi City. The tests held in October-November of 2019 identified that the acquired equipment is less effective for pumping of sand-gravel material of Batumi City coastline. The Contractor found the way out, transported the required quantity of sand-gravel material (30,500 m<sup>3</sup>) by trucks.
14. In the first half of 2020, the consultations were being held between the Contractor and Supervision Companies aimed at issue resolving. The Contractor was assigned to replace the existing equipment with effectively operational technique of relevant parameters, however proposed equipment was considered as unacceptable due to its high price.

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15. According to the Opinion #004151920 of LEPL Levan Samkharauli National Forensics Bureau, execution of works by applying of pipeline equipment is not expedient, since upon finalization of project works, the machinery (main hydraulic pump, dredging/booster pumps, pipeline) at maintenance stage shall be handed to the Beneficiary, in particular to Batumi Municipality.
16. With this regard, Batumi Municipality City Hall sent the Letter to MDF, notifying that there is no structural unit at the Municipality to carry out such activities and there are no required competent staffers there. Hence, they have to procure the works. If the Bidding for transportation of ballast by trucks is announced, the competition will be higher and selection of the Company will be simplified, rather than in case of announcing the Bidding for transportation by pipeline.
17. The following maps show the general location of the Project activities:

**Figure 1: General location**



**Figure 2. Site location**

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18. In addition to sediment recirculation, the beach in the South, suffering erosion, will also be protected by a revetment and enlarged over a stretch about 2 km long. Both sediment from recirculation (gravel) and sediment from excavation (needed to build the revetment) will provide nourishment to this southern portion of the littoral. In particular, in this first intervention, the gravel material from recirculation (approximately 30,000 m<sup>3</sup>) will be used to form the toe of the new enlarged beach.

**Figure 3. Site Location with GPS**



x=41 37.0371'N, y=41 35.0911'E  
 x=41 37.1117'N, y=41 35.1117'E  
 x=41 36.5740'N, y=41 35.0988'E  
 x=31 36.5842'N, y=41 35.0637'E

x=38.5445'N, y=41 37.1968'E  
 x=41 38.5392'N, y=41 37.2038'E  
 x=41 38.5427'N, y=41 37.2091'E  
 x=41 38.5276'N, y=41 37.2190'E

19. The Environmental Category of the proposed project for Batumi coastal protection is B (ADB's Safeguard Policy Statement, 2009), which refers to projects not having significant irreversible or permanent negative environmental impacts during or after construction. For

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this category of Projects ADB requires the preparation of Initial Environmental Examination (IEE).

## 2.2 Project Contracts and Management

16. On October 16, 2014 the contract between MDF and Technital, regarding the “Consulting services for- Batumi Coastal Improvement project”, was signed. The Contract Agreement for Civil works, with Struijk Group as Construction Contractor, was signed on 15 November 2016.
17. Commencement date for civil works is defined as February 1, 2017. Before starting any construction activities, Construction Contractor was required to develop Site Specific Environmental Management Plan (SSEMP), which was developed and approved as by Supervision Company and MDF, as well as by ADB.
18. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC)- Technital, the Construction Contractors -Struijk and to a lesser extent the Ministry of Environmental and Natural Resources Protection and Municipal Authorities. EA (MDF) and SCs are responsible for ensuring monitoring of the projects’ implementation at the construction stage. Ministry of Environmental and Natural Resources Protection has the authority for periodic audits but should not be considered as a party responsible for monitoring according to this IEE and EMPs.
19. The supervisor company (SC) of works commissioned by MDF is responsible to establish strong field presence in the Project area and keep a close eye on the course of works. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is mandated to track implementation of EMP/SSEMP by the contractor and reveal any deviations from the prescribed actions.
20. The Consultant’s staff, as outlined within the Consultant’s proposal, consists of an international Project Team, formed by TECHNITAL and a national team of experts, formed by Saunders Group Ltd.
21. With respect to this stage, the Supervision Team falls conveniently into two groups as follows (Table 1).

**Table 1: Supervision Team Composition**

<b>International</b>	<b>National</b>
Coastal Management Specialist/Team Leader	Coast Protection Engineer/Deputy TL
Coast Protection engineer	Hydraulic engineer
Geotechnical Engineer	Geotechnical Engineer
Environmental specialist	Sea Hydrologist
	Environmental specialist
	Quantity surveyor

22. As foreseen by the Contract No. SUTIP2/C/QCBS/7-2013 between MDF and Technital, dated October 16th 2014, for the Environmental supervision for the construction site (4.2 Construction Supervision, (a) International Team, Non-Key Experts, Environmental Specialist) the following tasks and responsibilities are requested:
  - Coordination and liaison with Government/Employer;



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- Reports preparation;
  - carry out environmental monitoring and management of project implementation;
  - help ensure the implementation of environmental management practices at each stage of the construction;
  - develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring;
  - submit periodic reports based on the monitoring data and laboratory analysis reports;
  - Implementation of environmental mitigation measures during construction period.
23. Construction Supervision Company is preparing quarterly progress reports, which cover the implementation of the SSEMP, discrepancies from the SSEMP and list all HSE relevant incidents and accidents that occur during the implementation; Submits periodic reports based on the monitoring data and laboratory analysis.
24. A Non-Compliance Notice has to be issued to the contractor if the SC requires action to be taken. The contractor is required to prepare a corrective action plan which needs to be implemented by a date agreed with the SC.
25. Construction Contractor (CC) is obligated to follow EMP/SSEMP and good construction practice. In order to meet this obligation, a contractor has established environmental management team and procedures. The Contractor has appointed an Environmental Manager (EM), which is a member of the construction management team based on site for the duration of the contract.
26. Duties and responsibilities of the Environmental Manager of the Construction Contractor are:
- To Identify all Environmental Aspects and Impacts for each activity;
  - To ensure compliance with all project standards, statutory requirements and permit conditions;
  - To liaise with government authorities on environmental issues;
  - To coordinate Environmental information flow between Client and Suppliers/Sub-Contractors;
  - Implementation of, and adherence to, all pre-construction, pollution prevention, waste management, water supply, aggregates, fauna and visual management requirements outlined in this plan;
  - Ensuring relevant permits are in place for site specific activities;
  - Implementation and supervision of the monitoring program;
  - Record keeping and reporting on a daily basis to the Project Manager;
  - Maintenance of records;
  - Ensure Training Department presents well founded and appropriate environmental training;
  - To plan and ensure implementation of all monitoring activities and evaluates results;
  - To ensure any corrective or preventative action is implemented in wise time;
  - Keep Project personnel fully informed of all environmental concerns and issues;
  - Close supervision of Sub-Contractors.
27. Thus, key responsibilities of the Contractor are preparation of the Site-Specific Environmental Management Plan (SSEMP) for approval by the Employer (EA) prior to the Contractors taking possession of the construction site; Ensure that the SSEMP is implemented effectively throughout the construction period; Carry out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; Establish an operational system for

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- managing environmental impacts; Allocate the budget required to ensure that such measures are carried out. Construction contractor is responsible to prepare monthly progress reports on SSEMP implementation, which should contain information on the main types of activities carried out during the reporting period, status of any clearances/permits/licenses which are required for carrying out such activities, mitigation measures applied, and any environmental issues that have emerged in relations with suppliers, local authorities, affected communities, etc.
28. MDF is responsible for general implementation of all safeguards tasks and guarantee that potential adverse environmental impacts arising from the Projects are minimized by implementing mitigation measures presented in the Initial Environmental Examination (IEE) or SSEMP, as applicable.
  29. Management of safeguards issues is carried out by the MDF through Environmental and Resettlement Unit, established in October 2014. From that time, number of Environmental and Resettlement team members has increased from 6 to 12 and currently consists of: Head of Unit, 4 environmental safeguards specialists, one social and gender specialist, 4 resettlement specialists. Since 2018, there is no ADB Environmental Consultant, but an Environmental Specialist is responsible for ADB projects. Until October 2014, Environmental and resettlement safeguards team was consisting of 3 environmental safeguards and 2 resettlement specialists, one of which was the ADB's national consultant on resettlement issues. Environmental and Social Safeguards team had a Team Leader who was an advisor to Executive Director of MDF on environmental and social safeguards issues.
  30. The Environmental and Resettlement Unit is involved in addressing of environmental and social safeguard issues throughout the entire projects' cycles. The Environmental and Social Specialists of the MDF, are responsible for management of the environmental and social aspects associated with development of all donor funded projects for which MDF is the responsible Executing Agency (EA). The Environmental Specialist of the MDF supervises ADB projects, review the IEEs/EIAs, EMPs, and SSEMPs of projects and carries out supervision of the construction performance based on approved EMPs, EIAs, and environmental standards in accordance with ADB "Safeguard Policy Statement" (2009) requirements' and acting Georgian Legislation.
  31. MDF ensures availability of all environmental information and facilitates environmental supervision of the project. The MDF's local environmental specialist's responsibilities in respect of implementation of the IEE/SSEMP, are to: ensure that all relevant IEE/SSEMP requirements (including environmental designs and mitigation measures) are duly incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies (NEA, etc.); Ensure that all necessary regulatory clearances are obtained before commencing any civil work on the project; Ensure, that contractors have access to the EMP and IEE report and understand their responsibilities to mitigate environmental problems associated with their construction activities and facilitate training of their staff in implementation of the EMP; Approve the Site-Specific Environmental Management Plan (SEMP) prepared by the Contractor before he takes possession of construction site; Time-to time monitor the

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contractor's implementation of the SEMP in accordance with the environmental monitoring plan by conducting site monitoring visits; The MDF through its Local Environmental Consultant, reports to the ADB in every 6 months on the status of environmental compliance of construction works by preparing semi-annual Environmental Monitoring Reports. In case unpredicted environmental impacts occur during the project implementation, prepare and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.

**Table 1.** List of environmental staff of organizations

Organization	Name	Position	Phone	E-mail
Lender - ADB	Nurlan Djenchuraev,	Senior Environment Specialist  Portfolio, Results, Safeguard, and Gender Unit		<a href="mailto:ndjenchuraev@adb.org">ndjenchuraev@adb.org</a>
	Nino Nadashvili	Associate Safeguard Officer ADB GRM	995577440990	<a href="mailto:nnadashvili@adb.org">nnadashvili@adb.org</a>
	Keti Dgebuadze	ADB RETA International Environmental Safeguards Consultant	995577232937	<a href="mailto:Kdgebuaдзе.consultants@adb.org">Kdgebuaдзе.consultants@adb.org</a> <a href="mailto:ketdgeb@yahoo.com">ketdgeb@yahoo.com</a>
Borrower - MDF	Ketevan Papashvili	Environmental specialist	995599149 696	<a href="mailto:kpapashvili@mdf.org.ge">kpapashvili@mdf.org.ge</a>
Supervision Consultant -	SC (Alexandre Abzianidze)	Environmenta l specialist	579060199	<a href="mailto:alexandre@sggeorgia.com">alexandre@sggeorgia.com</a>

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<u>Construction Contractor</u> - Struijck	(Mamuka Shaorshadze	HSE Manager	595 116 071	<a href="mailto:mshaorshadze@gmail.com">mshaorshadze@gmail.com</a>
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## 2.3 Project Activities during Current Reporting Period

32. Physical and financial progress by January 2022:

33. Activities according to the contract:

- The actual physical progress for the contract works is: 100 %.

34. During the reporting period, no civil works have been carried out at the camp site.

## 2.4 Description of Any Changes to Project Design

39. In the past two years the situation has changed sharply and with intensity that has been completely different from the experience of the last 15 years.

40. Sufficient magnitude erosion has been occurred during 2015-2017 years on Batumi beach, which needed to perform the additional works (back filling of the boulevard) asked by local government Municipality (Batumi) with MDF confirmation, and changes of the stone sizes from 50 mm to 7000 mm because small stones sizes would not provide the beach stabilization, considering of all these circumstances it was required the design changes. The modifications of the water depth and of the slope of the coastline just after the breakwater in north direction have been very important and were extended for approximately 2 km. The modification has been so important that the original sections could not be done any more and that the new solution should include also the reconstruction of the boulevard.

41. In order to avoid any further damages, the Engineer, in agreement with the Client (MDF) and its consultant, took the decision that it is immediately necessary to bring new material in the eroded portion of the coastline approximately equal to the volume lost in the past two years. This volume that is composed by gravel and sand with the grain size distribution defined by the Engineer has been dumped in the period between beginning of July and end of August 2017.

42. In parallel, the Engineer has proposed a final solution. The Client on May 17th 2017 requested to the Engineer to develop the updated detailed design of this solution. The solution has been further discussed with MDF, Consultant and with the Construction Contractor and the details have been agreed on the meeting held in Batumi on September 22nd, 2017.

43. The MDF asked Technital to revise the original design, including IEE and SSEMP in order not only to restore the protective function of the revetment but also to incorporate the actual

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embankment as integral part of the design. For this reason, the design revision, have taken into account the revetment, nourishment and boulevard.

44. On 6th of December 2017 the amendment has been signed between Technital and MDF with the approval of the "Adaptation design for Batumi coastal protection". SC submitted the revised design to the MDF by end of December, 2017. The revised design and other documentations (method statements) were approved by MDF in February, 2018. IEE was updated accordingly to ADB SPS 2009 together with revised detail design, which was agreed with MDF in March, 2018. By ADB updated IEE was approved in May, 2018. Updated IEE was disclosed at MDF's web-page: <http://mdf.org.ge/?site-lang=en&site-path=documents/&id=396>. SSEMP was also updated and approved as by MDF as well as by ADB prior to construction activities start.

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## **3 ENVIRONMENTAL SAFEGUARD ACTIVITIES**

### **3.1 General Description of Environmental Safeguard Activities**

45. Based on the EMP/SSEMP requirements, monitoring measures of project includes construction site supervision, verification of permits, monitoring of compliance of the contractors' performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, flora and fauna, water pollution, air emissions and etc. conducted by Contractor's and Engineer's environmental management specialists.
46. The Construction Contractor's QHSE Manager is: submitting environmental monitoring reports on a monthly basis; Coordinating community relations issues through acting as the Contractor's community relations focal point (proactive community consultation, complaints investigation and grievance resolution); Establishing and maintaining site records of:
- Site inspections during construction activities using check-lists based on SEMP;
  - Environmental accidents/incidents including resolution activities;
  - Environmental monitoring data;
  - Non-compliance notifications issued by the SC;
  - Corrective action plans issued to the SC in response to non-compliance notices;
  - Community relations activities including maintaining complaints register;
  - Monitoring reports;
  - Routine reporting of SEMP compliance and community liaison activities;
  - As per reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues.
47. Local environmental specialists conduct site-monitoring visits and supervise and monitor implementation of the SSEMP during construction activities.
49. MDF's Environmental Specialist ensures that the Contractors – CC and SC understand what is to be done and how to rectify and address any environmental issues rose during project implementation process. MDF's Environmental Specialist has regularly been performing monitoring of ongoing activities with close cooperation with env. specialists of SC and CC companies, by mailing, site monitoring visits and meetings. Coordination with the Contractor and SC has been performed by checking the Reports (SSEMP, monthly, HSE and etc.).

### **3.2 Site Inspections/Audits**

50. Post-Construction Environmental Audit has been conducted 10-11 February 2022 and report with its checklist has been prepared by the MDF and attached to this final EMR as an Annex 2

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## **3.3 Issues Tracking (Based on Non-Conformance Notices)**

54. Non-compliances have not been revealed during the reporting period. None of the previous non-compliances are left open.

## **3.4 Trends**

55. During the previous and current reporting period non –compliances were not observed. As mentioned above, the actual physical progress for the civil works is: 100 %, so no actual ongoing works were fixed during the reporting period.

## **3.5 Unanticipated Environmental Impacts or Risks**

56. No any unanticipated environmental impacts and risks have been occurred during the reporting period. Any significant violations of HSE procedures have not been recorded during July - December 2021 reporting period.

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## **4 RESULTS OF ENVIRONMENTAL MONITORING**

### **4.1 Overview of Monitoring Conducted during Current Period**

MDF requires the Construction and its Supervision Companies to implement construction activities in accordance with the environmental management plan, according to which SSEMP was developed.

59. Based on the EMP/SSEMP requirements, monitoring measures of projects includes construction site supervision, verification of permits, monitoring of compliance of the contractors' performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, flora and fauna, water pollution, air emissions and etc. conducted by Contractor's and Engineer's environmental management specialists.
60. As in the reporting period, no construction works were carried out, therefore measurement of air, noise, and biodiversity have not been conducted.

### **4.2 Trends**

64. N/A

### **4.3 Summary of Monitoring Outcomes**

65. No any recommendation for the additional monitoring.

### **4.4 Material Resources Utilization**

#### **4.4.1 Current Period**

66. N/A

#### **4.4.2 Cumulative Resource Utilization**

67. N/A

### **4.5 Waste Management**

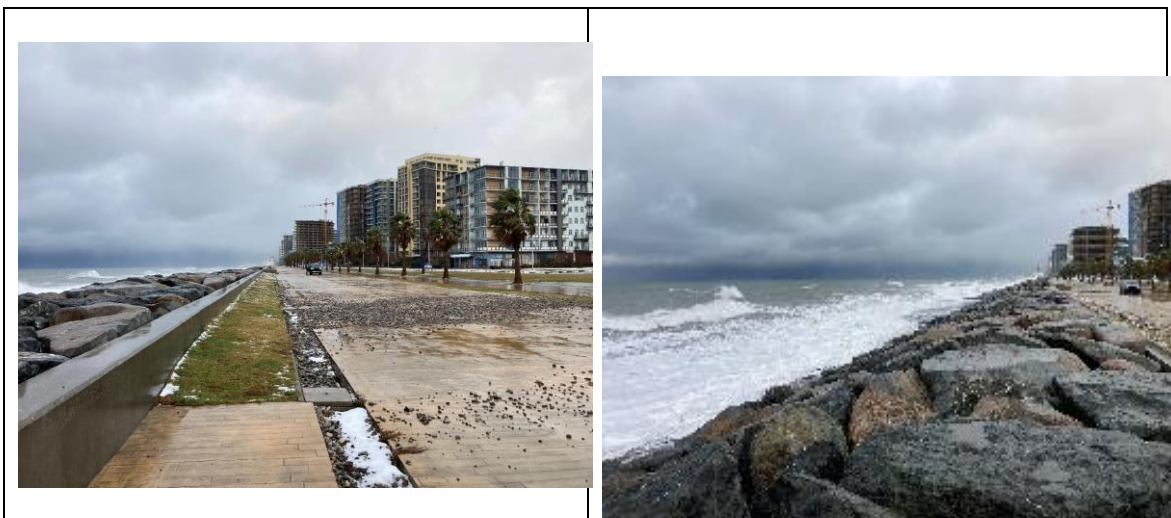
68. Constructions works generate different type wastes starting from garbage, recycle waste, house hold waste and construction and demolition debris, including, small quantities of hazardous waste generated mainly from the vehicle maintenance activities (liquid fuels, lubricants, hydraulic oils, chemicals and etc.).
69. Waste Management Plan was approved by "Saunders Group" Ltd, MDF (Municipal Development Fund) and director of construction contractor "Struijk Group Georgia LLC". There were installed three different waste bins in the temporary waste area. Proper signs



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- are installed: Hazardous waste, General waste, paper waste, plastic waste, smoking area, temporary hazardous waste area, grievance box, do not burn, WC, keep area clean and etc. Temporary hazardous waste area has been arranged with two layers of Polyethylene. Area is fenced with metal fence and locked.
70. The Construction Company collects hazardous waste at the temporary storage sites and pass it to the licensed operator Sanitary LTD having environmental permit on operation of the hazardous wastes. The contract with “Sanitary” Ltd was signed on 07 April, 2017. Small amount of hazardous waste (liquid fuels, lubricants and contaminated rags).
71. Household waste - Contractor “Struijk Group Georgia” Ltd is conducting household waste segregation: Plastic, Paper and General Waste. On disposal of household waste, a letter was provided by Batumi Municipality on: 29 May, 2017. Based on letter two big waste bins were provided by city municipality and once in a week, waste is taking out from the site by them to the municipal landfill.
72. Household waste as well as plastic and paper are collected in special waste bins and periodically disposed by Batumi Municipal Service on a contractual base. Hazardous waste area is well established with concrete ground, roofing, fencing and drainage system. Hazardous waste such as contaminated soil, solvents, and materials used in oil spill clean-ups and etc. is collected in closed drums and passed to a licensed operator company “Sanitari” Ltd., which has the permit on operation of the hazardous waste.
73. Construction waste is accumulated on construction site in special isolated areas divided by hazardous, domestic and construction waste. Construction Company has signed contract with the companies for waste removal. The waste is being removed from construction site by authorized personal only in accordance of safety regulations. As the construction works were over, construction waste as well as all types of waste accumulated at the camp site was removed. Concrete debris and all kind of construction waste generated during demolition works near the site camp and step by step was taken to the licensed landfill located near the city Batumi. Cleaning the site from the mud was carried out. During the reporting period, no waste has been generated.

**Figure 4.** Cleaned camp site



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1. The post-construction environmental audit was conducted on 10-11 of February 2022. During the audit, the entire project area was inspected. Particular attention was paid to the areas where, during the construction phase, the most non-compliances were observed during the environmental monitoring and audits conducted by the various organizations involved in the project. Visits were made to the following facilities and sections: Campsite area, Black Sea coast. During the post-construction environmental audit special checklist has been used and filled up (see **Annex 2**). Construction camp has been dismantled and the existing infrastructure units removed from the camp area. The contractor has totally cleaned the camp site.

## 4.5.2 Cumulative Waste Generation

74. N/A.

## 4.6 Health and Safety

75. Any significant violations of HSE procedures have not been recorded during July-December 2021 reporting period. Along the beach, proper signs are installed and coastal guards and relevant governmental agencies have been notified regarding the safety measures to be applied.

## Community Health and Safety

76. Any significant violations of community HSE procedures have not been recorded during July-December 2021 reporting period. During the reporting period, in order to manage community health and safety, proper signs are installed and coastal guards and relevant governmental agencies have been notified regarding the safety measures to be applied.
77. As the civil works were accomplished before COVID 19 outbreaks, no anti-COVID measures were required during this reporting period.

## Trainings

78. Taking into consideration specifics of the civil works conducted during the reporting period and the fact that no non-compliances were observed, trainings were not conducted during the given reporting period.

## Grievance Redress Mechanism

79. In order to provide a direct channel to the beneficiaries and have their grievances recorded and redressed in an appropriate time frame, Grievance Redress Mechanism was established for Batumi coastal protection project. Grievance journal (logbook) was created and available at construction site as well as at MDF's office. Locals were informed regarding GRM information and its functions. From MDF side, contact person was regularly

## Environmental Monitoring Report

communicated with beneficiaries and during the reporting period, no complaints were submitted to MDF or Contractor Company from locals or tourists.

# Environmental Monitoring Report

## **5 FUNCTIONING OF THE SEMP**

### **5.1 SEMP Review**

85. Construction Contractor “Struijk”, as it was mentioned above, implements environmental monitoring of construction activities in accordance to SSEMP. Based on the EMP/SSEMP requirements, monitoring measures of project includes construction site supervision, verification of permits, monitoring of compliance of the contractors’ performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, flora and fauna, water pollution, air emissions and etc.
86. Contractor has the ability to fully implement the requirements set out under the SSEMP. Monitoring of SSEMP implementation is conducted by Contractor’s and Engineer’s environmental management specialists.
87. Acting SSEMP is effective as along with project design change MDF ensured to update it as well and mitigation measures set out under the document are appropriate and working as intended. No other alternative better mitigation measures need to be set out, as existing ones are quite effective and comprehensive.

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## **6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT**

### **6.1 Good Practice**

88. N/A

### **6.2 Opportunities for Improvement**

89. N/A

# Environmental Monitoring Report

## **7 SUMMARY AND RECOMMENDATIONS**

### **7.1 Summary**

**7.2** Implementation of environmental safeguards during reporting period were generally implemented in accordance with SEMP and IEE requirements.

### **7.3 Recommendations**

**7.4** From the environmental point of view, major corrective actions have been carried out in the project zone and the conditions are satisfactory;

# Environmental Monitoring Report

ADB Project No: Sustainable Urban Transport Investment Program - Tranche 4

LOAN NUMBER 3273-GEO

Financed by: The Asian Development Bank

## **GEORGIA: SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM, Tranche 4**

### **Post - Construction Environmental Audit Report**

Prepared by: Municipal Development Fund of Georgia for the Asian Development Bank

February 2022

# Environmental Monitoring Report

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## ABBREVIATIONS

<b>ADB</b>	Asian Development Bank
<b>CAP</b>	Compensation Action Plan
<b>DC</b>	Design Consultant
<b>EA</b>	Executing Agency
<b>EHS</b>	Environmental Health & Safety
<b>EIA</b>	Environmental Impact Assessment
<b>EIP</b>	Environmental Impact Permit
<b>EMP/ SSEMP</b>	Environmental Management Plan/ Site-Specific Environmental Management Plan
<b>ES</b>	Environmental Specialist
<b>GoG</b>	Government of Georgia
<b>GRC</b>	Grievance Redress Committee
<b>GRM</b>	Grievance Redress Mechanism
<b>IA</b>	Implementing Agency
<b>USIIP</b>	Urban Sector Improvement Investment Program
<b>IEE</b>	Initial Environmental Examination
<b>MoEPA</b>	Ministry of Environment Protection and Agriculture of Georgia
<b>MoRDI</b>	Ministry of Regional Development & Infrastructure
<b>UWSCG</b>	United Water Supply Company of Georgia
<b>WS</b>	Water Supply

# Environmental Monitoring Report

## 1. INTRODUCTION

### 1.1 Preamble

2. This report represents the Post Construction Environmental Audit Report for ADB L3273-GEO: Sustainable Urban Transport Investment Program - Tranche 4: Coastal Protection Batumi project.
3. This Post Construction Audit Report is being prepared to comply with the 2009 ADB's SPS and Georgian legislation, including safeguards requirement and aims to identify past and present concerns from the production and business activities of Project Company that related to impacts on environment. The specific objectives of the audit can be summarized as follows:
  - Determine and verify whether all environmental requirements, criteria and constraints, prescribed in EIA and SSEMP have been adhered to during the construction phase.
  - Determine and verify whether the mitigation actions and rehabilitation requirements contained in the SSEMP have been appropriate and successful to prevent or control environmental pollution and/or damage.
  - Ensure that an appropriate environmental monitoring and control program exists to follow up on mitigation and rehabilitation works completed during the construction phase.
  - To identify any shortcomings in the SSEMP and EMS system implemented during the construction phase and to recommend alterations to the EMS applicable to the operational phase.

### 1.2. Project background

4. Coastal improvement is one of the priorities among other infrastructural projects, which will facilitate the future development of the Batumi City and region. The proposed project is aimed at protecting the Batumi coast against erosion, which is affecting the coastline southwest of Batumi, over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue and as a consequence the investment climate for tourism development could be negatively influenced.
5. The main objective of the proposed project is to protect the Batumi coast against erosion. The coastline southwest of Batumi is affected by erosion over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue at the airport area and at Adlia (village south of Batumi) and might even affect the beaches and the coastline of Batumi. As a consequence, the investment climate for tourism development could be negatively influenced.
6. The evaluation of the alternatives to protect the coast against the erosion affecting the southern section of the littoral has shown that a soft intervention, featuring recirculation of the sediment between the northern section of the littoral (where it accumulates due to natural transport pattern) and the southern portion (from where it is removed due to erosion), is the most efficient way to protect and restore the beach.
7. Therefore, the main intervention aiming at stabilizing this portion of the Batumi coastline features artificial nourishment in the southern portion of the littoral, just north of the airport, spread over a beach length of approximately 2,000 m, using material taken from the northern part of the coastline (where beach accretion is occurring).
8. The interventions for the protection of the coast under the project are listed here below:

# Environmental Monitoring Report

- Beach nourishment of the eroded sediment along the coast for about 1,680m, in the southern beach (approx. 120,000 m<sup>3</sup>);
  - Adapting the revetment to the existing local conditions for 1,750m;
  - Safeguard of greenery and boulevard for about 1,750m;
  - Yearly possible nourishment maintenance (50,000m<sup>3</sup>).
9. A Chorokhi river monitoring program providing the information needed to analyze the morphology and hydrology of the Chorokhi river and to study the shape of river mouth that could increase the deposit of the sediment from the river towards north and that could minimize the loss in the canyon of the sediments transported by the river.
10. For transportation of sediments, contractor selected and acquired respective equipment (hydraulic and booster pumps, pipes) and brought to Batumi City. The tests held in October-November of 2019 identified that the acquired equipment is less effective for pumping of sand-gravel material of Batumi City coastline. The Contractor found the way out, transported the required quantity of sand-gravel material (30,500 m<sup>3</sup>) by trucks.
11. In the first half of 2020, the consultations were being held between the Contractor and Supervision Companies aimed at issue resolving. The Contractor was assigned to replace the existing equipment with effectively operational technique of relevant parameters, however proposed equipment was considered as unacceptable due to its high price.
12. According to the Opinion #004151920 of LEPL Levan Samkharauli National Forensics Bureau, execution of works by applying of pipeline equipment is not expedient, since upon finalization of project works, the machinery (main hydraulic pump, dredging/booster pumps, pipeline) at maintenance stage shall be handed to the Beneficiary, in particular to Batumi Municipality.
13. With this regard, Batumi Municipality City Hall sent the Letter to MDF, notifying that there is no structural unit at the Municipality to carry out such activities and there are no required competent staffers there. Hence, they have to procure the works. If the Bidding for transportation of ballast by trucks is announced, the competition will be higher and selection of the Company will be simplified, rather than in case of announcing the Bidding for transportation by pipeline.

## 1.3. Main Stakeholders of the Project

14. On October 16, 2014 the contract between MDF and Technital, regarding the “Consulting services for- Batumi Coastal Improvement project”, was signed. The Contract Agreement for Civil works, with Struijk Group as Construction Contractor, was signed on 15 November 2016.
15. Commencement date for civil works is defined as February 1, 2017. Before starting any construction activities, Construction Contractor was required to develop Site Specific Environmental Management Plan (SSEMP), which was developed and approved as by Supervision Company and MDF, as well as by ADB.
16. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC)- Technital, the Construction Contractors -Struijk and to a lesser extent the Ministry of Environmental and Natural Resources Protection and Municipal Authorities. EA (MDF) and SCs are responsible for ensuring monitoring of the projects' implementation at the construction stage. Ministry of Environmental and Natural Resources Protection has the authority for periodic audits but should not be considered as a party responsible for monitoring according to this IEE and EMPs.
17. The supervisor company (SC), of works commissioned by MDF is responsible to establish strong field presence in the Project area and keep a close eye on the course of works. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is

# Environmental Monitoring Report

mandated to track implementation of EMP/SSEMP by the contractor and reveal any deviations from the prescribed actions.

18. The Consultant's staff, as outlined within the Consultant's proposal, consists of an international Project Team, formed by TECHNITAL and a national team of experts, formed by Saunders Group Ltd.
19. With respect to this stage, the Supervision Team falls conveniently into two groups as follows (Table 1):

**Table 1: Supervision Team Composition**

<b>International</b>	<b>National</b>
Coastal Management Specialist/Team Leader	Coast Protection Engineer/Deputy TL
Coast Protection engineer	Hydraulic engineer
Geotechnical Engineer	Geotechnical Engineer
Environmental specialist	Sea Hydrologist
	Environmental specialist
	Quantity surveyor

20. As foreseen by the Contract No. SUTIP2/C/QCBS/7-2013 between MDF and Technital, dated October 16th 2014, for the Environmental supervision for the construction site (4.2 Construction Supervision, (a) International Team, Non-Key Experts, Environmental Specialist) the following tasks and responsibilities are requested:

- Coordination and liaison with Government/Employer;
- Reports preparation;
- carry out environmental monitoring and management of project implementation;
- help ensure the implementation of environmental management practices at each stage of the construction;
- develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring;
- submit periodic reports based on the monitoring data and laboratory analysis reports;
- Implementation of environmental mitigation measures during construction period.

21. Construction Supervision Company prepared quarterly progress reports, which cover the implementation of the SSEMP, discrepancies from the SSEMP and list all HSE relevant incidents and accidents that occur during the implementation; Submits periodic reports based on the monitoring data and laboratory analysis.

22. A Non-Compliance Notices were issued to the contractor when the SC required action to be taken. The contractor was required to prepare a corrective action plan which needs to be implemented by a date agreed with the SC.

23. Construction Contractor (CC) was obligated to follow EMP/SSEMP and good construction practice. In order to meet this obligation, a contractor has established environmental management team and procedures. The Contractor has appointed an Environmental Manager (EM), which is a member of the construction management team based on site for the duration of the contract.

24. Duties and responsibilities of the Environmental Manager of the Construction Contractor were:

- To Identify all Environmental Aspects and Impacts for each activity;
- To ensure compliance with all project standards, statutory requirements and permit conditions;
- To lease with government authorities on environmental issues;

## Environmental Monitoring Report

- To coordinate Environmental information flow between Client and Suppliers/Sub-Contractors;
  - Implementation of, and adherence to, all pre-construction, pollution prevention, waste management, water supply, aggregates, fauna and visual management requirements outlined in this plan;
  - Ensuring relevant permits are in place for site specific activities;
  - Implementation and supervision of the monitoring program;
  - Record keeping and reporting on a daily basis to the Project Manager;
  - Maintenance of records;
  - Ensure Training Department presents well founded and appropriate environmental training;
  - To plan and ensure implementation of all monitoring activities and evaluates results;
  - To ensure any corrective or preventative action is implemented in wise time;
  - Keep Project personnel fully informed of all environmental concerns and issues;
  - Close supervision of Sub-Contractors.
25. Thus, key responsibilities of the Contractor were preparation of the Site-Specific Environmental Management Plan (SSEMP) for approval by the Employer (EA) prior to the Contractors taking possession of the construction site; Ensuring that the SSEMP is implemented effectively throughout the construction period; Carrying out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; Establish an operational system for managing environmental impacts; Allocating the budget required to ensure that such measures are carried out. Construction contractor is responsible to prepare monthly progress reports on SSEMP implementation, which should contain information on the main types of activities carried out during the reporting period, status of any clearances/permits/licenses which are required for carrying out such activities, mitigation measures applied, and any environmental issues that have emerged in relations with suppliers, local authorities, affected communities, etc.
26. MDF was responsible for general implementation of all safeguards tasks and guarantee that potential adverse environmental impacts arising from the Projects are minimized by implementing mitigation measures presented in the Initial Environmental Examination (IEE) or SSEMP, as applicable.
27. Management of safeguards issues is carried out by the MDF through Environmental and Resettlement Unit, established in October 2014. From that time, number of Environmental and Resettlement team members has increased from 6 to 12 and currently consists of: Head of Unit, 4 environmental safeguards specialists, one social and gender specialist, 4 resettlement specialists. Since 2018, there is no ADB Environmental Consultant, but an Environmental Specialist is responsible for ADB projects. Until October 2014, Environmental and resettlement safeguards team was consisting of 3 environmental safeguards and 2 resettlement specialists, one of which was the ADB's national consultant on resettlement issues. Environmental and Social Safeguards team had a Team Leader who was an advisor to Executive Director of MDF on environmental and social safeguards issues.
28. The Environmental and Resettlement Unit is involved in addressing of environmental and social safeguard issues throughout the entire projects' cycles. The Environmental and Social Specialists of the MDF, are responsible for management of the environmental and social aspects associated with development of all donor funded projects for which MDF is the responsible Executing Agency (EA). The Environmental Specialist of the MDF supervises ADB projects, review the IEEs/EIAs, EMPs, and SSEMPs of projects and carries out supervision of the construction performance based on approved EMPs, EIAs, and environmental standards

## Environmental Monitoring Report

in accordance with ADB “Safeguard Policy Statement” (2009) requirements’ and acting Georgian Legislation.

29. MDF ensured availability of all environmental information and facilitates environmental supervision of the project. The MDF’s local environmental specialist’s responsibilities in respect of implementation of the IEE/SSEMP, are to: ensure that all relevant IEE/SSEMP requirements (including environmental designs and mitigation measures) are duly incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies (NEA, etc.); Ensure that all necessary regulatory clearances are obtained before commencing any civil work on the project; Ensure, that contractors have access to the EMP and IEE report and understand their responsibilities to mitigate environmental problems associated with their construction activities and facilitate training of their staff in implementation of the EMP; Approve the Site-Specific Environmental Management Plan (SEMP) prepared by the Contractor before he takes possession of construction site; Time-to time monitor the contractor’s implementation of the SEMP in accordance with the environmental monitoring plan by conducting site monitoring visits; The MDF through its Local Environmental Consultant, reports to the ADB in every 6 months on the status of environmental compliance of construction works by preparing semi-annual Environmental Monitoring Reports. In case unpredicted environmental impacts occur during the project implementation, prepare and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.

# Environmental Monitoring Report

## **8 SUMMARY OF PREVIOUS ENVIRONMENTAL MONITORINGS/INSPECTIONS AND AUDITS**

### **1.2 Introduction**

30. The environment classification for Tranche 4 is Environmental Category B, as the impacts under subprojects SUTIP T4 are site specific and can be addressed through mitigation measures. For environmental category B, Initial Environmental Examination (IEE) was required. The environmental categorization of sub-projects was conducted by using ADB's Safeguard Policy Statement.
31. The MDF through its Environmental Specialist, reported to the ADB in every 6 months on the status of environmental compliance of construction works by preparing semi-annual Environmental Monitoring Reports. In case unpredicted environmental impacts occur during the project implementation, prepares and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.
32. MDF ensured (a) that construction, operation, and maintenance of the road are carried out in accordance with, and Georgia's environmental laws and regulations; and (b) potential adverse environmental impacts arising from the Project were minimized by implementing all mitigation and monitoring measures as presented in the EIA and the EMP.

### **1.3 Semi-annual Environmental Monitoring Reports**

33. As a matter of protocol, site inspections were conducted on various environmental aspects of the project and formed part of the Monthly Progress Report. Regular inspections were undertaken by local environmental specialists for Quarterly and Semi-annual Reporting. During the inspections, no major environmental, health and safety issues were observed and noted.
34. Non-compliances observed during the Environmental Audits conducted during the 2014-2019 reporting period is provided in the Annex 1.

# Environmental Monitoring Report

## 9 3. SUMMARY OF OBSERVATIONS OF THE SITE VISITS

35. The post-construction environmental audit was conducted on 10-11 of February 2022. During the audit, the entire project area was inspected. Particular attention was paid to the areas where, during the construction phase, the most non-compliances were observed during the environmental monitoring and audits conducted by the various organizations involved in the project. Visits were made to the following facilities and sections: Campsite area, Blak Sea coast. During the post-construction environmental audit special checklist has been used and filled up (see **Annex 2**).

### 3.1 Campsite

36. Construction camp has been dismantled and the existing infrastructure units removed from the camp area. The contractor has totally cleaned the camp site.

**Figures 1-2: Photo Materials of the construction site**





# Environmental Monitoring Report



37. The Ministry of Economy and Sustainable Development of Georgia has to take the constructed infrastructure into exploitation. This process is on-going. After relevant decree is issued all land plots used during construction works will be transferred back to the owner – Ministry of Finance and Economy of Autonomic Republic of Adjara.

## 4. CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Conclusions

38. No significant non-compliances were observed during the post-construction environmental audit of the project;
39. All construction and household waste is removed from the project area.
40. Construction camp has been dismantled and the existing infrastructure units removed from the camp area.

### 4.2. Recommendations

41. From the environmental point of view, major corrective actions have been carried out in the project zone and the conditions are satisfactory;
42. It is necessary to remove a small amount of construction waste from the territory of construction camp

**10 ANNEXES:**

# Environmental Monitoring Report

## **ANNEX 1: NON-COMPLIANCES OBSERVED DURING THE ENVIRONMENTAL AUDITS CONDUCTED DURING THE 2014-2019 REPORTING PERIOD**

# Environmental Monitoring Report

Date of submission	Description of Non-Compliance	Area	Corrective action required	Performance Date of Corrective actions
01.03.2018	During site camp inspection, it was discovered that the site generator was not roofed.	Batumi Camp site	Contractor Struijk group should roof the diesel generator.	Improved March, 20, 2018
01.03.2018	During site camp inspection, it was discovered that No flagman was during the concrete demolishing works.	Batumi site	Contractor Struijk group should have one flagman for each working equipment (excavator, hydraulic hammer, breaker) during the construction works!	Improved 22 April, 2018
14.03.2018	During site inspections, it was discovered that arranged access slope was steep and no access to down side.	Batumi site	Contractor Struijk group should arrange the safe slopes 1½:1 (34 degrees) and access to down side by steps, handrail.	Improved March, 30, 2018
15.08.2018	Fencing is not completed. The section of beach is open and tourists have access to the prohibited / barricaded area.	Constructi on site	Fence to be extended: Additional parts of the fence to be provided for completing the fence	Improved August, 22, 2018
15.08.2018	Not proper arranged concrete washout pit, No geotextile, No plastic. Wash water are poured into the hole.  Violations are found on the camp site area and Pictures are attached for easier reference.	Camp site	Hay bales with plastic lining can be used as concrete washout pit	Improved August, 22, 2018

# Environmental Monitoring Report

25.03.2019	<p>Not proper housekeeping is set near the reinforcement bars cutting and concrete pouring works areas. No reinforcements cut pieces (metal wastes) are collected, no designated area (no barricades, no facility, no sign) for reinforcements cutting. Used gloves, plastics are scattered</p>	Constructi on site	<p>Housekeeping done properly for this specific place and all reinforcement bars have been segregated and stored as project requires. Provided metal barrel for the metal waste for temporary storage. Barricading has been provided by safety tape. Special safety signs and temporary waste bins have been provided specially for this area.</p>	<p>Improved April, 03, 2019</p>
18.04.2019	<p>Not any flagman, banksman presences on the construction site</p>	Constructi on site	<p>On 17th of April separate flagman has been hired for the second access of the project road. This flagman (Kakha Beridze) will stand during working period exactly this area and will control the traffic of trucks and pedestrians (Tourists and locals).</p>	<p>Improved April, 27, 2019</p>
21.08.2019	<p>Not proper housekeeping is set on the construction site, especially near the open sections. No designated area (no wastes skips, containers, no environmental signs "Keep clean") nearby the open sections. Household wastes (napkins, empty cigarette boxes, plastic bottles) were scattered over there.</p>	Constructi on site	<p>On 27th of August several environmental signs "Keep clean" have been installed near the temporary opened sections of the boulevard and waste bin has been provided by controlling with Construction Contractor "Struijk Group Georgia".</p>	<p>Improved 27.08.2019</p>

## Environmental Monitoring Report

03.09.2019	The tourists and locals were coming to the prohibited area (second access). The gate was opened and the flagman was not on the proper place to control the perimeter.	Constructi on site	<p>Construction Contractor "Struijk Group Georgia" has been take action to close the main gate (second access) and only Michel (site manager), Berika (surveyor) and Sul Khan (flagman) have a key. Trucks and people who want to come on site have to contact them. So no one has a permission to enter in this place except these people. The gate is closed on daily bases.</p> <p>Also the corridors which connect the locals and the tourists to the beach accesses are well closed and tied.</p>	Improved 12.09.2019
12.09.2019	Barbed wire is installed near the staircase on the construction area for purpose to abstain the tourists, humans from access. Using of barbed wire for that purpose on the construction site is not allowed. High risks of the humans harms.	Constructi on site	<p>Construction Contractor "Struijk Group Georgia" has been took the corrective action to cut the barbed wire installed near the staircase which was holding the fence on the construction area.</p> <p>Special HSE induction conducted to the workers and flagmens on site.</p>	25.09.2019
25.09.2019	Barbed wire is installed near the staircase on the construction area for purpose to abstain the tourists, humans from access. Using of barbed wire for that purpose on the construction site is not allowed. High risks of the humans harms.	Constructi on site	<p>Construction Contractor "Struijk Group Georgia" has been took the corrective action to cut the barbed wire installed near the staircase which was holding the fence on the construction area.</p> <p>Special HSE induction conducted to the workers and flagman's on site.</p>	Improved 25.09.2019

# Environmental Monitoring Report

<p>16.10.2019</p>	<p>Unsafe lifting operation. Unloading and storing the pipes by the excavator is not acceptable, no riggers are available with the ropes for the manipulation actions. Manual handling of the manipulation is not safe, high risk of the stacking, personal injuries. No caps are provided for the pipes.</p>	<p>Constructi on site</p>	<p>1. We (Construction contractor – Struijk Group Georgia) provided short arm excavator because of not enough surround space during the rotation of the pipe on the temporary storage. The high up lift crane is too big for this job and not stabile. So we are operating very slowly, very accurately and 6 persons (4 flagmen, me and senior site manager) controlling every movement and always in touch each other during lifting and unloading process;</p> <p>2. Manual handling of the manipulation during unloading process of the pipes has been changed with special ropes (both sides);</p> <p>3. Stored pipes holes have been covered with polyethylene layers and with sand-pebbles;</p> <p>4. The unloading process with excavator and trailer always covered with safety tape, Traffic cones and controlled with flagmen and with QHSE Manager.</p> <p>5. Every personnel, during unloading process of the pipes are instructed on daily bases and conducted special HSES training for working in the safe environment.</p>	<p>Improved 16.10.2019</p>
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## Semi-annual Environmental Monitoring Report (July-December 2021)

### Results of Audit

No major non-compliances were revealed during the audit.

# Environmental Monitoring Report

## **Final Inspections and Monitoring**

During the reporting period monitoring and audits have been done by the ADB Mission and PIU/MDF

## **Results of monitoring**

**Camp sites** have generally been demobilized.



# Environmental Monitoring Report

## ANNEX 2: POST-CONSTRUCTION ENVIRONMENTAL AUDIT CHECKLIST

Required mitigation measures of environmental impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully				x	
Topsoil placed at original location	x				
Vegetation cover reinstated				x	
Trees replanted as needed				x	
Construction waste and surplus/waste soil removed completely and disposed properly	x				The construction waste is totally removed from the project site and from the construction camp. The existing infrastructure in the construction camp is totally demolished.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the project site.
Fuels and lubricants spills eliminated	x				Fuel or lubricant storage areas in the construction camps are totally demolished and waste is totally removed from the site
Contractor equipment and machinery removed	x				The construction equipment removed by the Contractor.
All temporary facilities removed and cleaned up	x				The temporary auxiliary buildings are fully removed from the site. Campsite territories has not been handover to the owners of the lands, until the Ministry of Economy puts into operation.
Streets with installed network reinstated to pre-construction or better conditions	x				Access roads were restored.
Post-Construction territory reinstated to pre-construction or better conditions	x				