

# Semi-annual Environmental Monitoring Report

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Ninth Semestral Report

Reporting period: July – December 2021

February 2022

**GEORGIA: SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM, Tranche 3**

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

Project Number: 42414-043

**Prepared by:** Municipal Development Fund of Georgia for the Asian Development Bank (ADB)

Tbilisi

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## ANNEXES:

### ANNEX1: NCR reports

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## Abbreviations

<b>ADB</b>	Asian Development Bank
<b>EA</b>	Executing Agency
<b>EARF</b>	Environmental Assessment and Review Framework
<b>EIA</b>	Environmental Impact Assessment
<b>EIP</b>	Environmental Impact Permit
<b>EMP</b>	Environmental Management Plan
<b>EPSM</b>	Engineering Procurement and Construction Management
<b>GoG</b>	Government of Georgia
<b>SUTIP</b>	Georgian Sustainable Urban Transport Investment Program
<b>IA</b>	Implementing Agency
<b>IEE</b>	Initial Environmental Examination
<b>MDF</b>	Municipal Development Fund of Georgia
<b>MFF</b>	Multi-tranche Financing Facility
<b>MEPA</b>	Ministry of Environmental Protection and Agriculture
<b>MRDI</b>	Ministry of Regional Development & Infrastructure
<b>SSEMP</b>	Site-Specific Environmental Management Plan

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## INTRODUCTION

### 1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for **Modernization of Tbilisi-Rustavi Section of the Tbilisi-Red Bridge (Azerbaijani Border) Road** (Section 2) project.
2. This report is the 9<sup>th</sup> EMR for the project.

### 1.2 Headline Information

3. Upgrading and improvement of local transport and transport-related infrastructure plays a significant role in the development of Georgia's urban 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. The program will provide efficient, reliable and affordable urban transport infrastructure and services, thereby increasing economic growth potential and competitiveness of urban communities, improving livelihoods of over 1.5 million people (approx. 35% of Georgian population). SUTIP, T3 includes(a) Construction of an approximately 6.8 kilometers 4-lane urban road link between the cities of Rustavi and Tbilisi, including a 2 kilometers urban boulevard and recreational areas; The project will also: (I) improve urban, environment and communities' access to economic opportunities and to public and social services; (II) promote efficient and sustainable urban transportation; and (III) generate income and employment opportunities. The environment classification for Tranche 3 is Environmental Category B, as the impacts under subprojects SUTIP T3 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.

## 2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

### 2.1 Project Description

4. The Municipal Development Fund of Georgia is an Executing Agency for the Modernization Project of Tbilisi-Rustavi Section (Sections I, II and III) of Tbilisi-Red Bridge (Azerbaijan Border) Road. Civil Works for Section I (KM0+000~KM4+000) and Section III (KM10+800~KM17+055) were successfully completed in 2016.

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5. Currently, EA is executing the Civil Works Contract (No. P42414-SUTIP3-ICB-3.02-2015) for Section II (KM4+000~ KM10+800) which passes through settlement of Phonichala. Detailed list of ongoing activities during the reporting period is given in article 2.3 below. For the photo materials, see table 1.
  6. Initially, the contract considered modernization of the road with total length of 6.8 km, which was divided into three Phases, the Dates of site accesses to the mentioned Phases were set as shown below and the Commencement Date was scheduled on Feb 28, 2017.
    - **Phase I- Part 1**-KM4+000~KM5+100 and **Part 2**- KM8+600~KM10+800 - 3.3km  
Site access: 7 days after the Commencement Date- i.e. **March 7, 2017**
    - **Phase II** – KM5+100~ KM6+900 -1.8km  
7 months after the Commencement Date-i.e. **September 1, 2017**
    - **Phase III** - KM6+900~ KM8+600 -1.7km  
12 months after the Commencement Date-i.e. **March 1, 2018**
  7. 730 days were set for the Time for Completion for the whole of the works and construction activities at Phase I commenced as scheduled.
  8. Full site access to the Phase II was not granted to the Contractor due to an issue related to the reinforcement of annexes of the buildings that are located adjacent to the Project RoW. Such reinforcement could not be carried out as the property owners had objection to the activities needed for building reinforcement. However, reinforcement was needed as mentioned annexes were voluntarily constructed and did not comply with any safety regulations or construction norms. In the industrial zone within Phase II, the Contractor was eventually granted access to an 800m section (Km58+40~KM66+40) of Phase II in August 2018., where they partially constructed foundations of three sections (60m) of Retaining Wall (RW). Besides said section of RW, only Site clearance activities were completed in the Phase II area (KM5+100~ KM6+900).
  9. Partial access to Phase III was granted to the Contractor at KM 6+900~KM7+400 and KM8+300~ KM8+600. Although the Contractor had access to the parts of Phase III, it was impossible to complete all construction activities at KM 6+900~KM7+400 due to high voltage overhead power lines, which needed to be relocated if the Project was to be fully completed. Therefore, only earthworks along with some part of drainage works and utility relocations were completed at the Section between KM6+900~KM7+400. Works at Phase III will be fully completed only within a 300m section i.e.

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KM8+300~ KM8+600. Such 300m section of Phase III falls exactly on the alignment of the Existing road.

10. Since the 300m section of Phase III (KM8+300~KM8+600 which is adjoining to the Part 2 of Phase I) is followed by Part 2 of Phase I (KM8+600~KM10+755), and at both of these sections works are to be completed fully in line with the design, it can be considered that Part 2 of Phase I is extended and re-established.

## **2.2 Project Contracts and Management**

11. The Lender of the Project is ADB, PIU-Municipal Development Fund of Georgia; EPCM consultant - JV "Dohwa Engineering Ltd" (Korea). The contract for Tbilisi-Rustavi urban link (Section 2) Construction Works was signed with Seza Insaat San. Ve Tic. Ltd. STI (Turkey) on December 12, 2016. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC), the Construction Contractor and to a lesser extent the Ministry of Environmental Protection and Agriculture and Municipal Authorities. EA (MDF) and SC are responsible for ensuring monitoring of the project implementation at the construction stage. Ministry of Environmental Protection and Agriculture has the authority for periodic audits but should not be considered as a party responsible for monitoring according to the SSEMP. As it was mentioned above, MDF is responsible for general implementation of all safeguard's tasks. EA (MDF) and SC (DOHWA) are responsible for ensuring monitoring of the project implementation at the construction stage, while Tbilisi City Hall and Road Department of the Ministry of Infrastructure and Regional Development at the road operation stage.
12. 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 incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies; 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

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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.

- 13.** The MDF through its Environmental Specialist, 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, prepares and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.
- 14.** 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. Construction Supervision Company is responsible for supervision of all environmental issues during project implementation. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is mandated to track implementation of EMP/SSEMP by the Construction Contractor and reveal any deviations from the prescribed actions.
- 15.** Environmental issues are managed by Supervision Company DOHWA responsible for:

  - Reviewing and approval of environmental documentation, submitted by contractor;
  - Preparing quarterly progress reports;
  - Monitoring of construction activities, issuing NCRs;
  - Relationship with contractor and employer;
  - Support of contractor in obtaining of environmental permits and licenses;
  - Correspondence with Employer, contractor and local authorities.
- 16.** Environmental specialist of technical supervisor should assess how accurate is the factual information provided in the contractor's reports, fill any gaps identified in them, and evaluate adequacy of mitigation measures applied by contractor. Technical supervisor must highlight any cases of non-compliance with EMP/SSEMPs, inform on any acute issues brought up by contractor or revealed by supervisor himself, and propose corrective actions.

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- 17.** During implementation of construction activities Engineer`s environmental specialist time to time conducts environmental meetings and site inspections. In case of observation of significant non-compliances Engineer fills non-conformity report forms and sends them officially to Contractor. Most important issues, which cannot be managed by HSE department, are subject of review during weekly meetings. In case of emergency, contractor officially asks support of Employer, in the range of its competence, refers to relevant ministries and local authorities.
  - 18.** Thus, 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. Non-compliance should be ranked according to the established criteria.
  - 19.** SC company prepares 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.
  - 20.** CC is obliged to follow EMP/SSEMP good construction practice during construction activities. In order to meet this obligation, Contractor has established environmental management team and procedures. The Contractor has contracted environmental consultancy company “GAMMA Consulting”, responsible for environmental monitoring of construction activities and development of thematic reports required under EIA, IEE and ADB guidelines and Georgian legislation. ‘GAMMA Consulting’ will monitor construction activities during whole period of project implementation.
  - 21.** Construction Contractor (SEZA) appointed a full time Health, Safety and Environmental Manager (HS&EM), which was a senior member of the construction management team based on site, for the duration of the contract. The construction contractor’s Environmental team responsible for implementation of EMP/SSEMP by daily environmental monitoring and reporting.
  - 22.** Key responsibilities of the environmental team of the CC are preparation of the Site-Specific Environmental Management Plan (SEMP) 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 managing environmental impacts; Allocate the



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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.

**23.** The CC submits reports of the carrying out of such measures to the employer on a monthly basis; establishing and maintaining site records of:

- Weekly site inspections 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/complaints log-book;
- Monitoring reports;
- Routine reporting of SEMP compliance and community liaison activities;
- Ad hoc reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues.

**24.** Information on environmental issues, arising from the construction activities should be immediately brought to the attention of MDF's national environmental Consultant and safeguards team by the environmental specialists of construction and Supervision Companies', in order to coordinate efforts and ensure immediate mitigation of impacts, protect the environment and safeguard the health and welfare of the local communities.

### **2.3 Project Activities during Current Reporting Period**

**25.** During the reporting period, Due Diligence activities have been carried out under the Government of Georgia's financial support.

**26.** The overall physical progress of works is 100 %.

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**Table 1.** Photographs of construction activities

The presented photo materials show the stockpile area that have been leveled under the Due Diligence report.



**Map 1.** Work site areas for period July-December 2021



**2.4 Description of Any Changes to Project Design**

27. There were no changes in the design.

**2.5 Description of Any Changes to Agreed Construction methods**

28. There were not any changes of construction methods during reporting period.

**3. Environmental Safeguard activities**

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

29. Site supervision and inspections, as well as monitoring of compliance of construction activities are important aspects to ensure the proper implementation of EMP/SSEMP requirements. Environmental management team of Construction and Supervisor Companies carry out permanent supervision activities and monitoring of the project performance on regular basis.

30. Due diligence report, which was prepared in June 2019 and approved by ADB in August 2019, indicated environmental, social and safety measures. The activities included in the DD were fulfilled during the reporting period.

### 3.2. Site Audits

31. MDF's representatives were permanently monitoring the site.

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

32. No non-compliances have been recorded during this reporting period.

**Table 3. Non-Compliance Reports revealed during the 2019-02.2021 project implementation period**

N of NCR	Date of submission	Description of Non-Compliance	Corrective action required	Performance Date of Corrective actions
079	15.08.2019	On the surface of the whole sections are noted the stratification of the concrete and sinks. The remaining from formwork mount gaps are not filled with concrete mix. The expansion joints were not properly treated after the concrete pouring process. The cracks are noted on the edges of the sections. The surface of the Retaining wall is covered with mud smudges. At the entrance of the Tunnel, the median dividing concrete strip is covered with chips.	Dissimilarity of the concrete mix. Insufficient vibration process of the poured concrete. Poor cleaning and insufficient lubrication of the formworks. Poor quality joints between sections.	Closed 29.11.2019
081	20.08.2019	The installation of the expansion joints shall be completed: In compensators "penoplast" temporary valves should be replaced with porous fillers. <ul style="list-style-type: none"><li>- Rubber gaskets are not arranged in the anti-seismic stops.</li><li>- Framework stretching armatures is not cut from pier columns.</li></ul>	The Contractor is not following the work conditions and requirements: <ul style="list-style-type: none"><li>- Unevenness of concrete mixture</li><li>- Paving concrete in above 300, without future carte of the concrete mixture.</li></ul>	Closed 04.11.2019

		<ul style="list-style-type: none"> <li>- Concrete surface (except pair columns) is uneven in concrete cracking's.</li> <li>- Hand rails surface is uneven and welding's are visible, and the metal elements of some sections is not painted properly with anti- corrosion paint.</li> <li>- Water removal pipes are not installed on footbridges and water intake pipes are installed with poor quality.</li> <li>- There is an urgent need to repair construction crack in middle platform pk88+20, on the right side of the bridge. In the same bridge on the right side the Contractor should finish mortar of the cement with send-gravel mix.</li> </ul>		
082	20.08.2019	<ul style="list-style-type: none"> <li>- Framework stretching armatures is not cut from pier columns.</li> <li>- In the both pier columns the surface is uneven, the concrete is covered with cracks and sinks.</li> <li>- The Concrete surface is uneven.</li> <li>- The rubber gaskets are not installed in anti-seismic stops.</li> <li>- Handrail section in No.1 column (on the right side) should be arranged according the project slope, taking in consideration the benchmark.</li> </ul>	<ul style="list-style-type: none"> <li>- Suppliers should ensure timely submission of necessary materials.</li> <li>- Work requirements should be performed completely.</li> </ul>	Closed 04.12.2019

		- New expansion joints should be installed on the right side if the bridge.		
083	10.09.2019	Filling the dividing strip with top soil at the PK 89+00.	Asphalt pieces and used tires should not be disposed in dividing strip. The Contractor should not be filling dividing strip with top soil and burying the waste.  Before filling of dividing strip all types of waste should be removed from it.	Closed 16.09.2019
3/71	24.05.19	Stone Curbs are opened and people are using them as a carriage way.	The Contractor should close opened stone curbs	n/a
84	30.01.20	Plastic parapets was removed by the local people to cross the road and it may cause traffic accident	The contractor should install concrete parapets	closed 13.03.2020
85	28.02.20	Damaged Road Sign and concrete parapets	The contractor should avoid accident on the mentioned area and repair damaged road sign and install it properly. Additionally, the dividing line should be filled with concrete parapets.	Closed 10.03.20 -

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### **3.4. Unanticipated Environmental Impacts or Risks**

**33.** There were not identified any unanticipated environmental impacts and risks in the current period, which were not identified in the Environmental Impact Assessment report.

## **4. Results of environmental monitoring**

### **3.5. Overview of Monitoring Conducted during Current Period**

#### **3.6. Waste Management**

**34.** During the reporting period, no waste have been produced on the construction site.

##### **3.6.1. Current Period**

The site remains free from any kind of waste.

##### **3.6.2. Cumulative Waste Generation**

No waste have been observed on the construction site during the reporting period.

#### **3.7. Health and Safety**

##### **3.7.1. Community Health and Safety**

**35.** No major incidents have been revealed during the reporting period.

##### **3.7.2. Worker Safety and Health**

**36.** There were no any H&S incidents on the construction sites during reporting period.

**37.** No traffic accidents have been recorded in result of abovementioned violations of traffic safety procedures.

#### **3.8. Grievance Redress Mechanism (GRM)**

**38.** There were no grievances logged during this reporting period.

**39.** Status of Complaints submitted to the CRP during the previous reporting periods are summarized below:

- On 14 March 2016, at least 81 residents of building N12 in the Ponichala area of the road section 2 of the Rustavi Highway forwarded a complaint to the Compliance Review Panel (CRP) through the Complaint Receiving Officer (CRO) of the Accountability Mechanism of the ADB's Board to authorize a full compliance review of the project. On the whole, six groups of affected persons filed complaints

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with OCRP. The complainants alleged that they were not properly consulted about the impact of the Project and the proposed mitigation measures. OCRP found ADB out of compliance with its operational policies and procedures.

- On 15 November 2016, based on compliance review, CRP issued a draft compliance review report to the complainants, MDF and ADB project team.
- On the 13 February 2017 CRP submitted its final report for the above project. The CRP found the project non-compliant with ADB's operational policies and procedures in six aspects: (i) noise impacts, (ii) vibration impact, (iii) impacts on vulnerable groups, (iv) impacts on water and river ecology, (v) consultations, and (vi) environment categorization of the project. The report found air quality impact compliant.
- In order to bring the project back into compliance, and in response to the findings of the CRP report, ADB project team and MDF proposed to undertake an integrated approach involving additional studies for noise impact, impact on the river ecology and iterative targeted consultations at the community level with a particular focus on the vulnerable. This approach was considered to be instrumental in identifying suitable solutions that are technologically feasible, cost effective, and compliant with all relevant standards. Also, as required by ADB's Safeguard Policy Statement, consultations with communities must continue throughout the project, or if there are changes in the project. An action Plan and the schedule of actions were proposed and agreed. ADB shared drafts of the additional studies with the CRP after finalization of the results.
- Final Solution was reviewed in March 2018 and disclosed in April/May 2018. Following the disclosure MDF and the project team have begun the preparation of concept designs and other documents required to process civil works and supervision contract variations.
- The Remedial Action Plan (RAP) is to be implemented over a period of three (3) years, to be completed by June 2020. ADB and MDF have initiated activities that feed into the RAP to bring the project back into compliance.

**40.** Implementation of the RAP became impossible largely as a result of the opposition of the community to the project. Affected people (AP) have not allowed access to the buildings for completion of detailed engineering assessment of structures and for establishing what works need to be done for strengthening of annexes. As a result, road works cannot be initiated in the area and other designs mitigation measures cannot be finalized. Remaining works under Phase II and Phase III cannot be completed by loan closing date.



41. On 22 February 2019 MDF sent a letter to MRDI with request to omit Phase II and III from the project. On the bases of MDF and MRDI letters on 8 April 2019, MOF requested ADB to remove remaining works under phases II and III from the Project as the connection between the subsections improved under phase I will be materialized through the existing road in Ponichala instead of the alignment as envisaged under Section 2. This alternative seeks to maximize the results of the Project before the MFF closing. In addition, a government decree was issued on 10 May 2019 authorizing MDF to initiate procedures to omit remaining works under phases II and III from the civil works contract.

- Due diligence was prepared by MDF and Engineer Dohwa and was submitted to ADB on 6 May 2019. The Final Due diligence report was submitted to ADB in June 2019.
- Table 5 below shows waste management status during the Jul-Dec 2020 reporting period.

**Table 5. Waste Status**

<b>Waste at the Construction Camp:</b>	<b>Status of waste</b>
Roots of the cut-down trees (30m <sup>3</sup> )	Most Part of the roots is removed from camp site
Used tires (20m <sup>3</sup> )	Waste is not removed from camp site
Ferrous metal waste (8m <sup>3</sup> )	Waste is removed from camp site
Damaged plastic barriers (15m <sup>3</sup> )	Waste is removed from camp site
Hazardous waste originated during the construction (10m <sup>3</sup> ).	Hazardous waste is not observed in camp site
<b>Waste along the Road Corridor</b>	<b>Status of waste</b>
A hardened body filled with concrete, which belongs to the concrete mixer, which was turned over as a result of a car accident PK 9+750.	Waste is removed
Concrete and construction waste is to be removed from PK 4+900 (Fig. 2-4).	Waste is removed
A noise attenuating wall and fencing material for the construction site is to be removed from section PK 5+980-6+780.	Waste is removed
Information boards are to be removed from PK 6+300 (Fig. 2-8).	Waste is removed
Concrete laid beyond the corridor borders is to be removed from PK 9+890, area adjacent to Krtsanisi Park (Fig. 2-9).	Waste is removed
160,000 m <sup>3</sup> inert spoil material and blocks are stored along section PK 6+900-7+140 (Fig. 2-10).	Waste is removed

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All the activities enshrined in Due Diligence Report have been fully fulfilled by the contractor. For more details, please find attached the Post Construction Audit Report.

## **5. Functioning of the SEMP**

### **3.9. SEMP Review**

- 42.** The Contractor considers SEMP requirements during implementation of construction activities and provide adequate monitoring and mitigation measures on all construction sites. Sometimes due to staff turnover, minor HSE violations happened on construction sites, which were resolved by the Contractor immediately after the Engineer`s instruction.
- 43.** In general, SEMP is effective, and mitigation measures are set out and do not need to be changed. Statuses of preparation of Environmental Management Plans are given in Annex 1.
- 44.** Currently, alternative mitigation measures are not necessary for successful implementation of the Project.
- 45.** There are no any mitigation measures, which could be reduced or removed as the specific risk identified in the IEE/EIA and/or SEMP has not materialized.

## **6. Good practice and opportunity for improvement**

### **3.10. Good Practice**

- 46.** No examples of good practice could be presented during reporting period. All performance was implemented within planned activities.

### **3.11. Opportunities for Improvement**

- 47.** N/A

## **7. Summary and Recommendations**

### **7.1 Summary**

- 48.** Implementation of environmental safeguards during reporting period were generally implemented in accordance with SEMP, IEE and EIA requirements.

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**Table 1: Issues identified during the monitoring period (including the pending issues from the previous report(s))**

<b>Issue</b>	<b>Required Action</b>	<b>Responsibility</b>	<b>Timing (Target Dates)</b>
1.			
2.			
etc.			

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**ANNEXES:****Annex 1**

## Status of Management plans

<b>No</b>	<b>Name of Plan</b>	<b>Preparing Prepared by</b> by/	<b>Deadline submission/ Date preparation (status)</b>	<b>for of</b>	<b>Agreed with/ Approved by</b>
1	Pre-construction survey of flora and fauna within the RoW	Prepared by GAMMA Consulting	May 5, 2017		Approved by DOHWA and MDF
2	Emergency Response Plan	Prepared by GAMMA Consulting	April 5, 2017		Approved by DOHWA and MDF
3	Waste Management Plan	Prepared by GAMMA Consulting	May 15, 2017		Approved by MoEPA DOHWA and MDF
4	Top Soil Management Plan	Prepared by GAMMA Consulting	June 10, 2017		Approved by DOHWA and MDF
5	Communication plan with local people	Prepared by GAMMA Consulting	June 20, 2017		Approved by DOHWA and MDF
6	Traffic management plan; it shall include Community Safety and a Community Liaison Management Plan	Prepared by GAMMA Consulting	January 25, 2018		Approved by DOHWA and MDF
7	Camp site management plan, layout plan of the work camp and sanitary facilities, including a description of wastewater treatment and disposal	Prepared by GAMMA Consulting	July 10, 2017		Approved by DOHWA and MDF
8	Cultural Heritage Management Plan	Prepared by GAMMA Consulting	January 25, 2017		Approved by DOHWA and MDF

9	Health and Safety Plan	Prepared by GAMMA Consulting	July 18, 2017	Approved by DOHWA and MDF
10	Tree felling and landscape management plan	Prepared by GAMMA Consulting	August 7, 2017	Approved by DOHWA and MDF
11	A method statement on the management of dust and noise from material transport (including construction of temporary noise barriers)	Prepared by GAMMA Consulting	July 17, 2017	Approved by DOHWA and MDF
12	Vibration control management plan (for 9 buildings)	Preparing by DRC	April 22, 2018	Approved by DOHWA and MDF
13	SSEMP for phase 1 and phase 3	Prepared by GAMMA Consulting	May 2018	Approved by DOHWA and MDF
14	SSEMP for phase 2	Prepared by GAMMA Consulting	May 2018	Approved by DOHWA and MDF
15	Building reinforcement plan	Prepared by the Contractor	May 2018	The concept methodology and relevant concept drawings have been approved by the Engineer and submitted to the Employer for further instructions
16	Oil separators construction plan	Prepared by the Contractor	May 2018	The concept methodology and relevant concept drawings have been approved by the Engineer and submitted to the Employer for further instructions
17	Vulnerable Groups Mitigation Plan	Prepared by the Contractor	20.01.2018	The concept methodology and

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				relevant concept drawings have been approved by the Engineer and submitted to the Employer for further instructions
18	Reinstatement management plan (tree planting plan)	Has not been submitted	May 2018	Will be submitted in August 2019
19	Due Diligence report	Prepared by the Contractor	July 2019	Approved by Dohwa and MDF
20	Due Diligence Method Statements	Prepared by the Contractor	August 2019	Approved by Dohwa and MDF

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Annex 2

**GEORGIA: SUSTAINABLE URBAN TRANSPORT INVESTMENT  
PROGRAM, Tranche 3**

(Financed by: The Asian Development Bank)

Project No: 42414-043

**Post - Construction Environmental Audit Report**

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

February 2022

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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

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# 1. INTRODUCTION

## 1.1 Preamble

1. This report represents the Post Construction Environmental Audit Report for ADB Project Number: 42414-043 GEORGIA: SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM, Tranche 3.
2. 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

3. The Municipal Development Fund of Georgia is an Executing Agency for the Modernization Project of Tbilisi-Rustavi Section (Sections I, II and III) of Tbilisi-Red Bridge (Azerbaijan Border) Road. Civil Works for Section I (KM0+000~KM4+000) and Section III (KM10+800~KM17+055) were successfully completed in 2016.
4. Initially, the contract considered modernization of the road with total length of 6.8 km, which was divided into three Phases, the Dates of site accesses to the mentioned Phases were set as shown below and the Commencement Date was scheduled on Feb 28, 2017.
  - **Phase I**- Part 1-KM4+000~KM5+100 and Part 2- KM8+600~KM10+800 - 3.3km  
Site access: 7 days after the Commencement Date- i.e. March 7, 2017
  - **Phase II** – KM5+100~ KM6+900 -1.8km  
7 months after the Commencement Date-i.e. September 1, 2017
  - **Phase III** - KM6+900~ KM8+600 -1.7km  
12 months after the Commencement Date-i.e. March 1, 2018
5. 730 days were set for the Time for Completion for the whole of the works and construction activities at Phase I commenced as scheduled.
6. Full site access to the Phase II was not granted to the Contractor due to an issue related to the reinforcement of annexes of the buildings that are located adjacent to the Project RoW. Such reinforcement could not be carried out as the property owners had objection to the activities

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needed for building reinforcement. However, reinforcement was needed as mentioned annexes were voluntarily constructed and did not comply with any safety regulations or construction norms. In the industrial zone within Phase II, the Contractor was eventually granted access to an 800m section (Km58+40~Km66+40) of Phase II in August 2018, where they partially constructed foundations of three sections (60m) of Retaining Wall (RW). Besides said section of RW, only Site clearance activities were completed in the Phase II area (KM5+100~ KM6+900).

7. Partial access to Phase III was granted to the Contractor at KM 6+900~KM7+400 and KM8+300~KM8+600. Although the Contractor had access to the parts of Phase III, it was impossible to complete all construction activities at KM 6+900~KM7+400 due to high voltage overhead power lines, which needed to be relocated if the Project was to be fully completed. Therefore, only earthworks along with some part of drainage works and utility relocations were completed at the Section between KM6+900~KM7+400. Works at Phase III will be fully completed only within a 300m section i.e. KM8+300~ KM8+600. Such 300m section of Phase III falls exactly on the alignment of the Existing road.
8. Since the 300m section of Phase III (KM8+300~KM8+600 which is adjoining to the Part 2 of Phase I) is followed by Part 2 of Phase I (KM8+600~KM10+755), and at both of these sections works are to be completed fully in line with the design, it can be considered that Part 2 of Phase I is extended and re-established.

**Figure 1: Location Map of the Project**



### 1.3. Main Stakeholders of the Project

9. The Lender of the Project is ADB, PIU-Municipal Development Fund of Georgia; EPCM consultant - JV "Dohwa Engineering Ltd" (Korea). The contract for Tbilisi-Rustavi urban link

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(Section 2) Construction Works was signed with Seza Insaat San. Ve Tic. Ltd. STI (Turkey) on December 12, 2016. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC), the Construction Contractor and to a lesser extent the Ministry of Environmental Protection and Agriculture and Municipal Authorities. EA (MDF) and SC are responsible for ensuring monitoring of the project implementation at the construction stage. Ministry of Environmental Protection and Agriculture has the authority for periodic audits but should not be considered as a party responsible for monitoring according to the SSEMP. As it was mentioned above, MDF is responsible for general implementation of all safeguards tasks. EA (MDF) and SC (DOHWA) are responsible for ensuring monitoring of the project implementation at the construction stage, while Tbilisi City Hall and Road Department of the Ministry of Infrastructure and Regional Development at the road operation stage.

10. 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 incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies; 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.
11. The MDF through its Environmental Specialist, 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, prepares and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.
12. 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. Construction Supervision Company is responsible for supervision of all environmental issues during project implementation. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is mandated to track implementation of EMP/SSEMP by the Construction Contractor and reveal any deviations from the prescribed actions.
13. Environmental issues are managed by Supervision Company DOHWA responsible for:
  - Reviewing and approval of environmental documentation, submitted by contractor;
  - Preparing quarterly progress reports;
  - Monitoring of construction activities, issuing NCRs;
  - Relationship with contractor and employer;
  - Support of contractor in obtaining of environmental permits and licenses;
  - Correspondence with Employer, contractor and local authorities.
14. Environmental specialist of technical supervisor should assess how accurate is the factual information provided in the contractor's reports, fill any gaps identified in them, and evaluate

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adequacy of mitigation measures applied by contractor. Technical supervisor must highlight any cases of non-compliance with EMP/SSEMPs, inform on any acute issues brought up by contractor or revealed by supervisor himself, and propose corrective actions.

15. During implementation of construction activities Engineer`s environmental specialist time to time conducted environmental meetings and site inspections. In case of observation of significant non-compliances Engineer filled non-conformity report forms and sent them officially to Contractor. Most important issues, which could not be managed by HSE department, were subject of review during weekly meetings. In case of emergency, contractor officially asked support of Employer, in the range of its competence, referred to relevant ministries and local authorities.
16. The contractor was required to prepare a corrective action plan which needs to be implemented by a date agreed with the SC. Non-compliance should be ranked according to the established criteria.
17. SC 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; Submitted periodic reports based on the monitoring data and laboratory analysis.
18. CC was obliged to follow EMP/SSEMP good construction practice during construction activities. In order to meet this obligation, Contractor has established environmental management team and procedures. The Contractor has contracted environmental consultancy company "GAMMA Consulting", responsible for environmental monitoring of construction activities and development of thematic reports required under EIA, IEE and ADB guidelines and Georgian legislation. 'GAMMA Consulting' monitored construction activities during whole period of project implementation.
19. Construction Contractor (SEZA) appointed a full time Health, Safety and Environmental Manager (HS&EM), which was a senior member of the construction management team based on site, for the duration of the contract. The construction contractor's Environmental team responsible for implementation of EMP/SSEMP by daily environmental monitoring and reporting.
20. Key responsibilities of the environmental team of the CC were: i) preparation of the Site-Specific Environmental Management Plan (SEMP) for approval by the Employer (EA), prior to the Contractors taking possession of the construction site; ii) Ensuring that the SSEMP is implemented effectively throughout the construction period; iii) Carrying out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; iv) Establishing an operational system for managing environmental impacts; v) Allocating the budget required to ensure that such measures are carried out. Construction contractor was responsible to prepare monthly progress reports on SSEMP implementation, which contained 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.
21. The CC submitted reports of the carrying out of such measures to the employer on a monthly basis; establishing and maintaining site records of:
  - Weekly site inspections using check-lists based on SEMP;

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- 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/complaints log-book;
  - Monitoring reports;
  - Routine reporting of SEMP compliance and community liaison activities;
  - Ad hoc reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues.
22. Information on environmental issues, arising from the construction activities should be immediately brought to the attention of MDF's national environmental Consultant and safeguards team by the environmental specialists of construction and Supervision Companies', in order to coordinate efforts and ensure immediate mitigation of impacts, protect the environment and safeguard the health and welfare of the local communities.

## **2. SUMMARY OF PREVIOUS ENVIRONMENTAL MONITORINGS/INSPECTIONS AND AUDITS**

### 2.1 Introduction

23. The environment classification for Tranche 3 is Environmental Category B, as the impacts under subprojects SUTIP T3 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.
24. 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 occurred during the project implementation, prepared and implemented as necessary an environmental emergency program in consultation with relevant government agencies and ADB.
25. 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 are minimized by implementing all mitigation and monitoring measures as presented in the EIA and the EMP.

### 2.2 Semi-annual Environmental Monitoring Reports

26. As a matter of protocol, site inspections were conducted on various environmental aspects of the project and form part of the Monthly Progress Report. Regular inspections were undertaken by local environmental specialists for Quarterly and Semi-annual Reporting.

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During the inspections, no major environmental, health and safety issues were observed and noted.

Non-compliances observed during the Environmental Audits conducted during the 2014-2019 reporting period is provided in the Annex 1.

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

27. The post-construction environmental audit was conducted on 3-4February 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 audits conducted by the various organizations involved in the project. Visits were made to the following facilities and sections: Campsite, Stockpile area, Mtkvari riverbed area, compensation planting area.

During the post-construction environmental audit special checklist has been used and filled up (see **Annex 2**).

#### 3.1 Campsite

28. The Defect Liability period is on-going. The Contractor was instructed to remedy the defects, dismantle all temporary buildings that were built in the course of construction and clean the camp site. The Contractor removed the construction waste and cleaned both sides of the road.

**Figures 2 -5: Restored area of camp**







29. After clearing the campsite, all land plots used for construction will be transferred back to the owner: Tbilisi City Municipality. Until October 2022, Defects liability period is ongoing, during which the CC asked to remain the territory under their ownership.

All the activities put in the Due Diligence report have been fulfilled in the reporting period, specifically:

**Leveling of stockpile next to building 28A** - The temporary spoil material storage facility at PK 6+900-7+140 (Photo 1) have been made safe, landscaped, covered with borrow material and reseeded. Project land have been used for the purpose of further storage of materials (in this case, the stored ground is called inert/excess construction material and not construction waste).

**Reinstatement of Mtkvari riverbed;** - A river ecology and impact assessment study was completed at the design stage to investigate the ecological sensitivity of the river to the Project, assess the magnitude of impacts, and propose likely mitigation measures. The report concluded that impacts from the Project on the Mtkvari river ecosystem will be insignificant. In order to mitigate the minor residual impact on the natural habitat, habitat restoration should be undertaken along the river banks. After construction has started, close monitoring was required to ensure that mitigation as outlined in the EMP and the river ecology report is implemented.

According to the Hydrologic Analysis of the Mtkvari river, carried out during design stage, it was concluded, that even in the event of constructing 1700m long retaining wall, the river bed and its natural flows would not be affected by constructed part of the retaining wall, which is only 60m long. Such part of the structure is not impeding the flow since it is located at the shore of the river.

In addition to the existing Hydrologic Analysis of the river, hydrological expert hired by Supervision Company Dohwa, carried out relevant audit additionally in order to ensure that such partially constructed retaining wall does not affect the river Mtkvari's natural flow at the construction area as well as further down to Rustavi direction.

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According to the expert, the construction works carried out in the area of the Mtkvari river did not affect river's sustainable riverbed width which is 80m. Respectively, sustainable width of the riverbed and the processes of its bedding, the migration routes of the fish, and the places of their immersion are not disturbed. In addition, since the Project does not consider any active intervention into the river, the riverbed morphology at the lower section (Rustavi direction) of River Mtkvari is preserved and unaffected (Please see Attachment 1 for Hydrologist's conclusion). The cofferdam has naturally been eroded away by spring peak flows and the flow within the river has been restored during the last two years.

**Works related to the foundation of the retaining wall, built in the riverbed** - A 60 m long retaining wall foundation has been built in the Mtkvari riverbed. Following works have been carried out to ensure safety of the above referenced foundation:

the existing reinforcement was cut off at 1 m above from the concrete. The rest was cleaned/treated by sand-blast method and painted with anti-corrosive paint. The remainder wire mesh was placed into in-situ concrete armor. These measures ensure protection of the foundation of the retaining wall and unimpeded flow of the river.

**Compensation planting of the plants in lieu of cut off trees (1,5 tree in lieu of 1 cut off tree and 1:10 ones of the Red List) in Tbilisi and Gardabani Municipalities.** Compensation plantings have been carried out in Tbilisi and Gardabani municipality. During the defects liability period the CC is carrying out maintenance works as well changing the dried trees with the new ones.

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## 4. CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Conclusions

- 30. No significant non-compliances were observed during the post-construction environmental audit of the project;
- 31. All construction and household waste are removed from the project area.
- 32. All construction camps have been dismantled and the existing infrastructure units removed from the camp area; Defect liability period for the CC is ongoing until October 2022, during which the campsite area will remain under the ownership of the CC.

### 4.2. Recommendations

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

## ANNEXES:

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

N of NCR	Date of submission	Description of Non-Compliance	Corrective action required	Performance Date of Corrective actions
079	15.08.2019	On the surface of the whole sections are noted the stratification of the concrete and sinks. The remaining from formwork mount gaps are not filled with concrete mix. The expansion joints were not properly treated after the concrete pouring process. The cracks are noted on the edges of the sections. The surface of the Retaining wall is covered with mud smudges. At the entrance of the Tunnel, the median dividing concrete strip is covered with chips.	Dissimilarity of the concrete mix. Insufficient vibration process of the poured concrete. Poor cleaning and insufficient lubrication of the formworks. Poor quality joints between sections.	Closed 29.11.2019
081	20.08.2019	The installation of the expansion joints shall be completed: In compensators "penoplast" temporary valves should be replaced with porous fillers.  - Rubber gaskets are not arranged in the anti-seismic stops.  - Framework stretching armatures is not cut from pier columns.  - Concrete surface (except pair columns) is uneven in concrete cracking's.  - Hand rails surface is uneven and welding's are visible, and the metal elements of some	The Contractor is not following the work conditions and requirements:  - Unevenness of concrete mixture  - Paving concrete in above 300, without future carte of the concrete mixture.	Closed 04.11.2019

		<p>sections is not painted properly with anti- corrosion paint.</p> <ul style="list-style-type: none"> <li>- Water removal pipes are not installed on footbridges and water intake pipes are installed with poor quality.</li> <li>- There is an urgent need to repair construction crack in middle platform pk88+20, on the right side of the bridge. In the same bridge on the right side the Contractor should finish mortar of the cement with sand-gravel mix.</li> </ul>		
082	20.08.2019	<ul style="list-style-type: none"> <li>- Framework stretching armatures is not cut from pier columns.</li> <li>- In the both pier columns the surface is uneven, the concrete is covered with cracks and sinks.</li> <li>- The Concrete surface is uneven.</li> <li>- The rubber gaskets are not installed in anti-seismic stops.</li> <li>- Handrail section in No.1 column (on the right side) should be arranged according the project slope, taking in consideration the benchmark.</li> <li>- New expansion joints should be installed on the right side if the bridge.</li> </ul>	<ul style="list-style-type: none"> <li>- Suppliers should ensure timely submission of necessary materials.</li> <li>- Work requirements should be performed completely.</li> </ul>	Closed 04.12.2019
083	10.09.2019	<p>Filling the dividing strip with top soil at the PK 89+00.</p>	<p>Asphalt pieces and used tires should not be disposed in dividing strip. The Contractor should not be filling dividing strip with top soil and burying the waste.</p> <p>Before filling of dividing strip all types of waste should be removed from it.</p>	Closed 16.09.2019

3/71	24.05.19	Stone Curbs are opened and people are using them as a carriage way.	The Contractor should close opened stone curbs	n/a
84	30.01.20	Plastic parapets was removed by the local people to cross the road and it may cause traffic accident	The contractor should install concrete parapets	closed 13.03.2020
85	28.02.20	Damaged Road Sign and concrete parapets	The contractor should avoid accident on the mentioned area and repair damaged road sign and install it properly. Additionally, the dividing line should be filled with concrete parapets.	Closed - 10.03.20

## Semi-annual Environmental Monitoring Report (July-December 2021)

### Results of Audit

No major non-compliances were revealed during the audit.

### Final Inspections and Monitoring

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

### Results of monitoring

Camp sites have generally been demobilized. Waste is removed from the territory.

## 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			Topsoil was reused for project purposes.
Vegetation cover reinstated				x	
Trees replanted as needed	x				Compensation plantings were carried out in full accordance with EIA requirements in Tbilisi and Gardabani municipalities
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 camps. The existing infrastructure in the construction camps 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 been handover to the owners of the lands.
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				

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