

# Bi-annual Environmental Monitoring Report

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Loan 2993-ARM  
July–December 2016

## ARM: North–South Road Corridor Investment Program, Tranche 3

Prepared by the “Organization for Implementation of North–South Road Corridor Investment Program” State Non-Commercial Organization (PIU) based on the monthly Environmental Monitoring Reports of the Project Management Consultant (PMC)

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“ORGANIZATION FOR IMPLEMENTATION OF NORTH-SOUTH ROAD CORRIDOR  
INVESTMENT PROGRAM” STATE NON-COMMERCIAL ORGANIZATION  
CHIEF EXECUTIVE OFFICER

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27 01 2017

ԱԶԲ

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Պարոն Թոմաս Հերցին

To: Tomas Herz  
Senior Transport Specialist  
ADB

Ծրագրի համար՝ 42145

Հայաստան՝ Հյուսիս-հարավ ճանապարհային  
միջանցքի ներդրումային ծրագիր, Տրանշ 3

Project number: 42145

Armenia: North-South Road Corridor  
Investment Program, Tranches 1 and 2

Առարկա՝ Կիսամյակային բնապահպանական  
մոնիթորինգի հաշվետվություն, հուլիս-դեկտեմբեր  
2016թ.

Subject: Bi-annual Environmental Monitoring  
Report July-December 2016

Հարգելի պարոն Թոմաս Հերց,

Dear Mr. Tomas Herz,

Կից Ձեր դիտարկմանն ու հաստատմանն են  
ներկայացնում 2016թ. հուլիս-դեկտեմբեր  
ժամանակահատվածի կիսամյակային բնա-  
պահպանական մոնիթորինգի հաշվետվությունը:  
ԱԶԲ ազգային բնապահպանական խորհրդատուն  
վերանայել է հաշվետվությունը և իր բոլոր  
առաջարկություններն ու դիտողությունները հաշվի  
են առնված:

For your review and approval please find attached  
Bi-annual Environmental Monitoring Report for  
July-December 2016. The ADB National  
Environmental Consultant has reviewed the report  
and all her comments have been addressed.

Հարգանքով՝

Best regards,

Վ.ԿԱՐԱՊԵՏՅԱՆ

V. KARAPETYAN

Կատ. Գ. Աֆյան  
Մ. Բադեյան

Prep. by: G. Afyan  
M. Badeyan

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## **List of Abbreviations**

ADB	Asian Development Bank
CEMP	Contractor's Environmental Management Plan
EMP	Environmental Management Plan
EIA	Environmental Impact Assessment
ES	Environmental Specialist
PIU	Project Implementation Unit
MFF	Multi-tranche Financing Facility
MNP	Ministry of Nature Protection
MOTCIT	Ministry of Transport, Communication and Information Technologies
MoC	Ministry of Culture
SEMP	Site Specific Environmental Management Plan
TMP	Traffic Management Plan
EMR	Environmental Monitoring Report

## **Part I Introduction**

This Bi-annual Environmental Monitoring Report covers the time period from July to December of 2016.

The Report was prepared with close cooperation with Supervision Consultant, which is the joint venture of SPEA Engineering & IRD Engineering companies.

1. The RA has selected the Bavra-Yerevan-Agarak route as the North-South Road Corridor to be rehabilitated, reconstructed and expanded and has appointed the “North-South road Corridor Investment Program PIU” SNCO (“NSRP” PIU SNCO) of the Ministry of Transport, Communication and Information Technologies (MOTCIT) to co-ordinate the work.
2. The Multi-tranche Financing Facility (MFF) is designed to rehabilitate and upgrade national north-south roads to form a new, upgraded and expanded North-South highway. The main objective is to widen the existing 2-lane roads (often in poor condition) to become 4-lane divided roads along existing alignments wherever possible or to construct new alternate 2-lane roads where a single 4-lane road would not be feasible.
3. The Asian Development Bank has provided a loan in the framework of the MFF for the North-South Road Corridor Investment Program to the Government of Armenia to cover the cost of Reconstruction and Improvement of Talin—Lanjik road Section (Km 71+500 to Km 90+200) of M1 Talin—Gyumri Road.
4. The Tranche 3 Project starts at km 71+500 in Talin community and end at km 90+200 close to Lanjik community – about 18.7km. This road is currently a II category and has 2 opposite traffic lanes. After reconstruction this road section is expected to be I category with cement concrete pavement.
5. The reconstruction of 9 overpasses on M2 Yerevan-Artashat and M1 Yerevan-Ashtarak is financed from cost savings from Tranche 3. These works are being carried out by local contractors and are supervised by the Supervising Consultant/Engineer for Tranche 3.

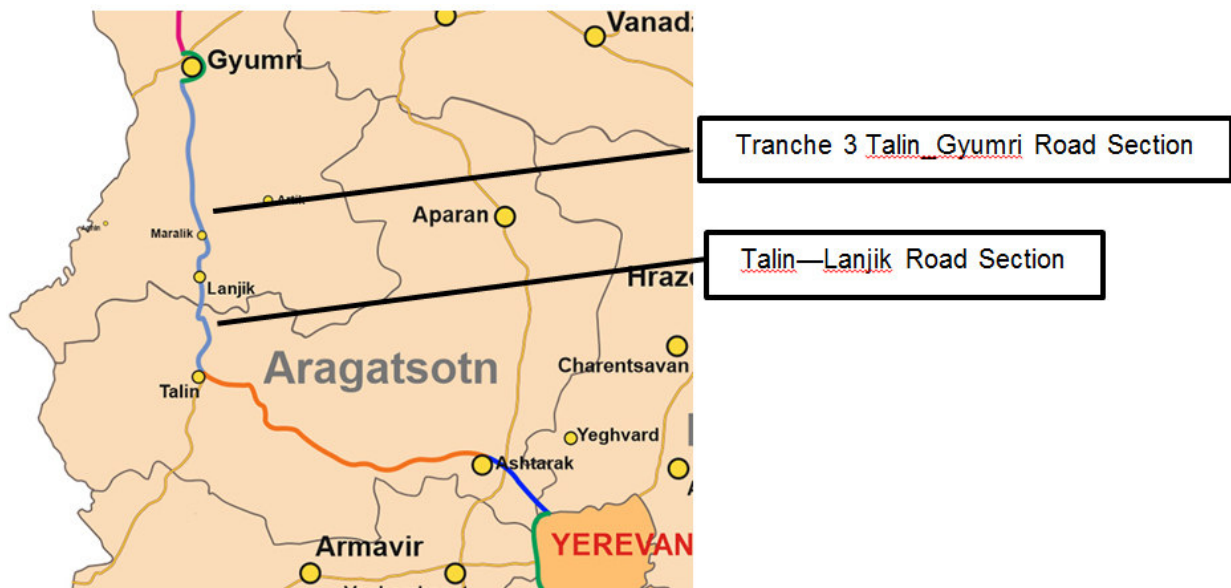


Figure 1. Tranche 3 of North-South Road Corridor

## 1. Construction Activities and Project Progress during Reporting Period

### 1.1 Talin—Lanjik Road Section (Km 71+500 to Km 90+200) of M1 Talin—Gyumri Road:

1.1.1 Sinohydro Corporation Ltd was hired for reconstruction and improvement of the road section and JV SPEA Engineering & IRD Engineering was recruited for providing supervision consulting services.

1.1.2 The commencement date of construction works was 22 July 2016.

1.1.3 Construction works were implemented by Sinohydro Corporation Ltd and its subcontractor Stones LLC.

1.1.4 The following construction activities were implemented: soil excavation, rock excavation, clearing and grubbing works, base and sub base preparation, construction of culverts, embankment.

1.1.5 Traffic regulating signs/signals have been installed for safety/security purposes and maintenance of road has been implemented.

### 1.2 Reconstruction/Construction/Rehabilitation of 9 Overpasses on North-South Road Corridor (M2 Yerevan-Artashat and M1 Yerevan-Ashtarak)

1.2.1 The reconstructions of 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak are being carried out by local contractors and are supervised by the JV SPEA Engineering & IRD Engineering. Works on 9 overpasses are financed from cost savings from Tranche 3.

1.2.2 Overpass on M2 km 13+029 in Ayntap and Masis city. The local contractor is Ararat Chanshin LLC and Factory of Reinforce Bridge Concrete Structures CJSC JV. During



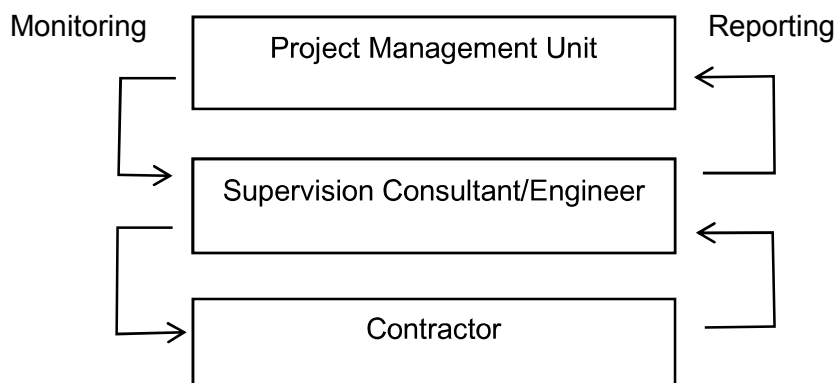
reporting period following construction works were implemented: the cleaning of construction site; the road closing and warning signs installation; demolition and removal of the asphalt covers, demolition of the protective layer of reinforced concrete, reinforced concrete slab, and the metal constructions; earthworks; preparation of foundations' pits; reinforcement of foundations; concrete works; installation of posts.

- 1.2.3 Overpass on M2 km 21+800 (M2 Yerevan-Artashat) in Araqsavan and Dimitrov communities. The local contractor is Dorozhnik LLC and Hayk-Shin LLC JV. During reporting period following construction works were implemented: the cleaning of construction site; the road closing and warning signs installation; demolition and removal of the asphalt covers, demolition of the protective layer of reinforced concrete, reinforced concrete slab, and the metal constructions; earthworks; preparation of foundations' pits; reinforcement of foundations; concrete works; Installation of the intermediate and boundary r/c pillars; installation of posts.
- 1.2.4 Overpasses on M2 km 10+943 in Ayntap, M2 km 22+850 in Masis, M2 km 25+630 in Azatavan and M1 km 21+550 in Ashtarak (M1 Yerevan-Ashtarak). The local contractor is Montagetransshin CJSC. During reporting period following construction works were implemented: the cleaning of construction site; the road closing and warning signs installation; demolition and removal of the asphalt covers, demolition of the protective layer of reinforced concrete, reinforced concrete slab, and the metal constructions; earthworks (exacavation and embankment); preparation of foundations' pits; reinforcement of foundations; concrete works; Installation of the intermediate and boundary r/c pillars; installation of posts.
- 1.2.5 Overpasses on M2 km 15+444 in Masis and Marmarashen, M2 km 24+147 in Burastan, M2 km 28+900 in Artashat. The local contractor is Sahakyanshin CJSC. During reporting period following construction works were implemented: the cleaning of construction site; the road closing and warning signs installation; demolition and removal of the asphalt covers, demolition of the protective layer of reinforced concrete, reinforced concrete slab, and the metal constructions; earthworks; preparation of foundations' pits; reinforcement of foundations; concrete works; Installation of the intermediate and boundary r/c pillars; installation of posts.

## **2. Environmental Safeguards Staffing**

- 2.1.1 The Project Management Unit is implementing day-to-day management of project execution. The PIU includes a Social and Environmental Unit whose responsibilities include the management of all environmental aspects of the project
- 2.1.2 The Supervision Consultant/Engineer carries out all construction supervision activates and reporting of the project. Environmental Safeguards Unit of the Consultant is responsible for supervising the construction works in relation to environmental and archaeological impact and, in particular, for supervising and reporting on the Contractor's performance in the implementation of the EMP.

- 2.1.3 Contractors are implementing construction works. Contractor's Environmental Unit is responsible for preparation and implementation EMPs, monitoring of the construction activities and reporting.



## 2.2 PIU External Impact and Resettlement Component

- 2.2.1 External Impact and Resettlement activities are undertaken by External Impact and Resettlement Coordinator; Social Safeguards Specialist and Environmental Specialist:

Mr. Gevorg Afyan - External Impact and Resettlement Coordinator is responsible for Environmental, Resettlement and social management of the project.

Mss. Sona Poghosyan- Social Safeguards Specialist is responsible for the compliance of the project to ADB's Safeguard Policy and RA Legislation.

Ms. Mariam Badeyan - Environmental Specialist is responsible for the compliance of the projects to ADB's Environmental Policy and RA Legislation. She is a part-time employee.

Mr. Tigran Oganezov - Environmental and Archaeological Specialist is responsible for the compliance of the projects to ADB's Environmental Policy, EIB's Environmental Policy and RA legislation. He is a part time employee.

## 2.3 The Talin—Lanjik Road Section

### 2.3.1 Consultant Environmental Safeguards Unit

Presently the Consultant Environmental Safeguard Unit consists of:

Ms. Edita Vardgesyan, the Environmental Specialist (ES) is responsible for handling environmental issues in the road section, ensuring Contractor's compliance with contractual environmental mitigation measures and Armenian environmental related legislation, monitoring and reporting.

Mr. Boris Gasparyan, the Archaeological Specialist, is responsible for the consultancy on

archaeological issues in the road section, compliance of the construction activities to the Armenian archaeological related legislation and inspection visits to the borrow pit, dumping and concrete plant sites with archaeological evaluation purposes.

### **2.3.2 Contractor's Health and Safety, Environmental, Archaeological and Social Unit**

The Unit is staffed by five people:

Mr. Liu Mingjian, the HSE Director, is responsible for the overall management of the Unit;

Mr. Mikael Tevosyan, the Environmental Specialist, to assist the HSE director on the environmental management plan implementation;

Mrs. Arevik Sindoyan, the Social Impact Specialist, is responsible for the compliance of the Contractor's activities to social part of the ADB Safeguard Policy Statement;

Mr. Ashot Revazyan, Security and Health Specialist is responsible for the compliance of the Contractor's activities to health and safety part of the ADB Safeguard Policy Statement.

Mr. Artur Petrosyan, Archaeologist, is responsible for protection of historical, cultural and archaeological monuments from negative impacts of the construction activities within framework of the EMP implementation;

## **2.4 9 Overpasses (M2 Yerevan-Artashat and M1 Yerevan-Ashtarak)**

### **2.4.1 Contractors' Health and Safety, Environmental and Social staff**

2.4.1.1 Overpass on M2 km 13+029 in Ayntap and Masis city. The site responsible chief, foreman is Vigen Avagyan and environmental specialist responsible on environmental, emergency, health and safety management is Minas Minasyan.

2.4.1.2 Overpass on M2 km 21+800 (M2 Yerevan-Artashat) in Aragavan and Dimitrov communities. The site responsible chief, foreman is Vigen Avagyan and environmental specialist responsible on environmental, emergency, health and safety management is Ruzanna Voskanyan.

2.4.1.3 Overpass on M2 km 10+943 in Ayntap. The site responsible chief, foreman is Gagik Gevorgyan and environmental specialist responsible on environmental, emergency, health and safety management is Arshak Petrosyan.

2.4.1.4 Overpass on M2 km 22+850 in Masis. The site responsible chief, foreman is Artavazd Stepanyan and environmental specialist responsible on environmental, emergency, health and safety management is Narek Qocharyan.

2.4.1.5 Overpass on M2 km 25+630 in Azatavan. The site responsible chief, foreman is Artavazd Stepanyan and environmental specialist responsible on environmental, emergency, health and safety management is Narek Qocharyan.

- 2.4.1.6 Overpasses on M2 km 15+444 in Masis and Marmarashen, M2 km 24+147 in Burastan, M2 km 28+900 in Artashat. The site responsible chief, foreman is Samvel Martirosyan and environmental specialist responsible on environmental, emergency, health and safety management is Armine Hayrapetyan.
- 2.4.1.7 M1 km 21+550 in Ashtarak. The site responsible chief, foreman is Manvel Khachatryan and environmental specialist responsible on environmental, emergency, health and safety management is Narek Qocharyan.

## **Part II Environmental Management**

### **3. Environmental Safeguards Program**

#### **3.1 Compliance with National Safeguards**

3.1.1 In order to comply with national safeguard system and national legislation, Contractor has obtained necessary permits and licenses for construction activities the list of which is presented in Annex A.

3.1.2 As an environmentally active economic agent Contractors provide regular environmental reports to MNP in accordance with Armenian legislation. The quarterly report for 4th quarter 2016 is being submitted by Contractor during the reporting period.

3.1.3 The Contractors of Talin-Lanjik road section and 9 Overpasses ensures all necessary communication with local (communities) and territorial administrative authorities (marzes) to comply with Armenian legislation. 2 contracts for temporarily stockpiling of topsoil within administrative boundaries of Lanjik community are signed with the head of community. Approval for temporarily stockpiling of topsoil in Lanjik community is obtained from Shirak marzpetaran. Contract is signed with Maralik municipality for disposal of garbage in the municipal landfill.

3.1.4 The thresholds for monitoring of environmental parameters of dust, water, noise and vibration are set in accordance with standards and norms set by Armenian legislation.

#### **3.2 Compliance with ADB Safeguards**

3.2.1 In order to ensure the environmental performance, it was requested that the implementation of construction activities meet EIA/EMP for Tranche 3 (Talin-Lanjik road section) and IEE/EMP for Tranche 1 (9 overpasses) requirements which is prepared in accordance with ADB Environmental Policy and RA legislation.

3.2.2 Prior to operating any site for topsoil stockpiling and excavated material disposal the contractor is requested to prepare Site-specific Environmental Management Plan containing the identification of site-specific environmental impacts, risk assessment and mitigation measures in accordance with the Environmental Safeguards Information kit prepared by ADB Central & West Asia Department Safeguards Unit. The PIU adopted and requests the Engineer and Contractor to pursue following procedures: (i) Contractors select the site for topsoil stockpiling or dumping of excavated material; (ii) Consultant ES and AE visit the site and provide Contractor with site evaluation report with identified sensitive receptors and recommendations on the site use; (iii) Contractor secures the site and prepares SEMP based on the findings of evaluation report and submits for Consultant approval; (iv) Consultant ES reviews the SEMP and issues an approval; (v) Then Contractor is permitted to start the site operation. In case of reconstruction of the 9 overpasses, there are not needed to select site for topsoil stockpiling and organize AE visit to the site (excavated material disposal sites located on constructed and modified landscapes), as well as the SEMP of overpass is included risk assessment and mitigation measures of a dump site.

3.2.3 As Tranche 3 is "A" category project, ADB continues to conduct review missions at least every 6 months to check compliance of "North-South Road Corridor Investment Program" activities to ADB SPS (2009) requirements. The ADB conducts at least one review on 9 overpasses

reconstruction project as it is “B” category project. ADB mission conducted loan reviews in Talin-Lanjik road section and 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak of North-South road corridor investment program on 2 August 2016, on 21 October 2016. On 29 November 2016 only the overpasses were visited. Environmental compliance was reviewed during the visits.

### **3.3 Contractor’s Compliance with the EMP**

3.3.1 The Contractor is guided by the EIA and EMP for Tranche 3 as a part of the Bid and Contract documents. Compliance with EMP is being monitored and reported. As specified in the Contract Documentation Contractor was requested prepare a Contractor’s Environmental Management Plan (CEMP) which includes the Tranche 3 Talin- Lanjik road section project description, legislative and institutional framework, description of existing environmental conditions, impact assessment and mitigation measures, schedule and responsibilities for monitoring, public consultations and GRM, as well as environmental responsible procurement and reporting responsibilities. First version of CEMP was submitted to Engineer in August 2016 which was conditionally approved. Although the Contractor’s EMP was approved, it needs further updates and improvements according to the Engineer’s and PMU’s comments to meet ADB Safeguard requirements. The Engineer and PMU are expressed their positions through official letters, regular weekly meetings as well as meetings related to the environmental issues. Non-compliance notice issued. Finally, the CEMP, updated according to the comments, was submitted and conditionally approved by Engineer. (The deadline is on 30 January, 2017

3.3.2 A pre-construction public hearing has been implemented by the Contractor in Lanjik community impacted by the Project in order to meet the ADB SPS (2009) requirements on information disclosure and public participation.

3.3.3 The SEMP’s for reconstruction of 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak prepared by the contractors implementing overpasses’ reconstruction have been approved .

### **3.4 Approvals of the Site-specific environmental management plans for Quarries, Borrow Pits, Blasting works, Excavated Material Dumping, Topsoil Stockpiling, Concrete Batching Plants and Historical monuments**

#### **Talin—Lanjik Road Section.**

3.4.1 Site visits have been implemented by Engineer's Environmental Specialist and Archaeology Expert for evaluation of sites for dumping and temporary stockpiling of stripped topsoil. The evaluation stated that there were no significant environmental and archeological issues that could preclude the use of the site for the purpose.

3.4.2 Site- specific environmental management plans for topsoil stockpiling sites: Lanjik 1 (km 87+700) and Lanjik 4 (km 87+000) were prepared and included in the CEMP. They were approved together with the conditional approval of CEMP, and in case of the deadline for final CEMP will not be met the SEMP’s will be approved by Engineer separately. Both mentioned sites are used by the Contractor.

3.4.3 The Contractor has used 1 site for disposal of excavated unsuitable subsoil in Lanjik community - Lanjik 2 (km 88+500). The final SEMP for dump site is being requested from the Contractor and is still awaited.

3.4.4 The status of topsoil stockpiling sites and excavated material dump sites, and the SEMP for their operation as of 31 December 2016 is presented below.

No	Name of site	purpose	SEMP approved (Y/N)	Status of operation	
				Operated	Operation not started
1	Lanjik- 1 TSS	Topsoil stockpiling	Y/ conditional approved		
2	Lanjik-2 DS	Excavated subsoil dump site	N/ draft SEMP provided		
3	Lanjik-4 TSS	Topsoil stockpiling	Y/ conditional approved		

3.4.5 During the reporting period the Contractor has implemented structural concrete class D, blinding concrete, waterproofing (2 layer bitumen) works for culverts for water crossings by using concrete material which was supplied from Maralik concrete batching plant. The final version of SEMP for Maralik concrete batching plant is still awaited. January 30, 2017 is set as a deadline for submission of SEMP for concrete plant.

3.4.6 The Contractor has used a construction camp area established in Maralik for Lanjik – Gyumri road section. The Contractor is being requested to establish a separate construction camp for Talin-Lanjik road section and provide a new mobilization plan for Tranche 3 Talin- Lanjik road section. The SEMP for construction camp has not been submitted by the Contractor for the Engineer's approval yet. January 30, 2017 is set as a deadline for submission of SEMP for construction camp.

3.4.7 During the reporting period the Contractor implemented embankment works. The Contractor didn't provide any information on the sources of material for the mentioned embankment works whether it is from excavation, existing registered quarries or newly opened borrow pits Contractor repeatedly applied to the PIU/ Engineer with request providing assistance in obtaining legal permits for exploitation of quarry. In response, the assistance was provided in terms of consultation on Armenian legal requirements and the Contractor was recommended either to proceed with legal procedures in order to obtain permit for new borrow pit operation or to contract a supplier in Armenian market. January 30, 2017 is set as a deadline for provision of data on sources of construction materials for embankment.

#### 9 Overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak.

3.4.8 The SEMP for reconstruction of 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak prepared by the contractors implementing overpasses' have been approved .

### 3.5 ADB Mission

3.5.1 To check compliance of the Program activities to the ADB SPS (2009) requirements an ADB audit missions took place on 2 August 2016 and on 21 October 2016. The senior environmental Specialist of ADB was involved in first mission visit and National Environmental Consultant of ADB was involved in second mission visit. The PIU's, the Consultant/Engineer's as well as the Contractors' representatives were participated on both mission visits. Another joint visit was organized to the Talin—Lanjik Road Section together with the National Environmental Consultant to monitor the ongoing situation as it was requested by the Project team leader on 12 December 2016:

3.5.1.1 Talin—Lanjik Road Section. The concrete batching plant should have proper drainage before operation; the SEMP should be prepared according to the Engineer's comments and the pavement of the construction camp should be improved in order for the mud and silt not to penetrate to the highway and local roads.

3.5.1.2 9 Overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak. The proper warning signage, speed limits, health and safety measures of workers as well as appropriate lighting need to be urgently solved at the overpasses and bridge construction sites; the SEMP for overpasses and bridge should include road safety measures.

### 3.6 Trainings and awareness raising orientation

#### 3.6.1 Talin—Lanjik Road Section.

3.6.1.1 Regular awareness raising discussions and environmental compliance trainings on ADB environmental, health & safety safeguard requirements were conducted for the Engineer's site inspectors.

3.6.1.2 The Environmental Compliance Trainings were conducted in Contractor's Camp on 29 of July 2016, 24 of September 2016 and on 25 of November 2016. The ADB safeguards and Armenian legislative requirements for environment and Health & Safety, measures planned in EMP and monitoring findings as well as archaeological chance find were presented. Workers, drivers and management staff of the Contractor and Sub-Contractor participated in the event. Training was organized by the Environmental team of the Contractor in association of Environmental Specialist of Supervision Consultant.

3.6.1.3 Additional Safety awareness trainings have been conducted during reporting period with drivers, machine operators and workers at the site in periodically manner to improve the work safety practices of the company.





### 3.6.2 9 Overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak.

3.6.2.1 At the beginning of the civil works, workers of all 4 contractors were briefed on general measures in case of Emergency situations, Occupational Health & Safety, Environmental issues as part of SEMP by contractors' environmental specialists. Briefing has been done on a continuous basis during individual meetings with workers as well. Workers were periodically supervised to ensure requirements set in SEMP.

## 3.7 **Archaeological Works Program** (Talin—Lanjik Road Section)

- 3.7.1 The construction works were carried out in the area of the protection zone of the Lanjik Archaeological Complex (km 86+000 – km 89+740). The permission of MOC to start civil works was obtained under the condition that the section's civil works shall be implemented under the control of archaeology expert. The Works were carried out under the control of archaeology expert□
- 3.7.2 To understand the level of impact on the archaeological sites located along the alignment of the road, procurement of works for implementation of the corresponding field investigations have been initiated. The purpose of investigations is to understand the level of direct impact of the construction activities on the archaeological sites in Talin-Lanjik (km 71+500 – km 90+200) road section.
- 3.7.3 No construction works have been implemented in next proximity to other archaeologically sensitive areas.

### 3.8 Grievance redress mechanism and Consultations

3.8.1 Grievance redress mechanism to address the complaints/suggestions of communities on excessive dust, noise, improper waste dumping and on other environmental issues is established. The grievance redress mechanism is additional to the existing channels of petitions in the form of letters and personal pleas established by local governments.

The Grievance Procedure and Redress Mechanism steps are shown graphically in figure 2.

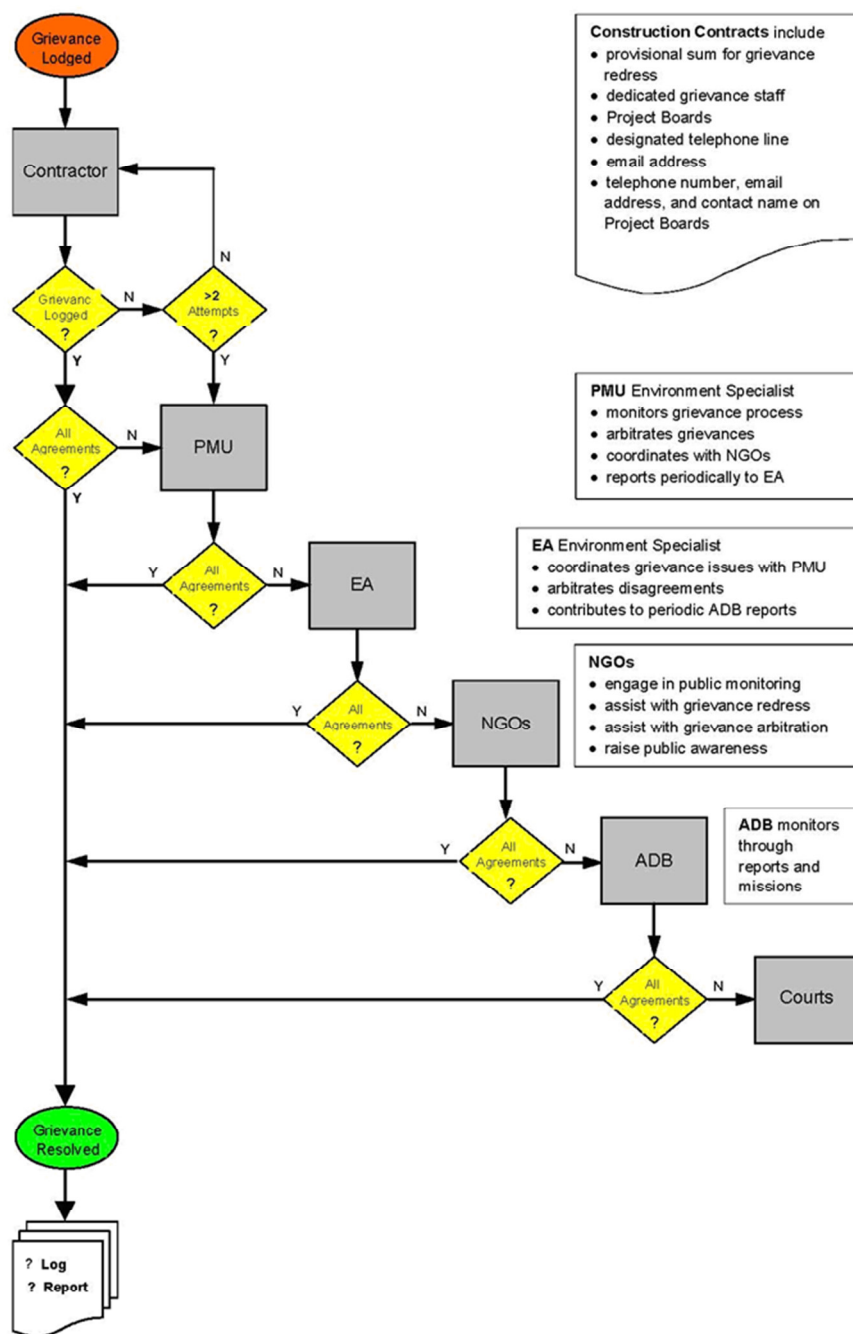


Figure 2. Grievance Procedure and Redress Mechanism

3.8.2 During reporting period the pre-construction public awareness raising meetings organized by the Contractors. The purpose of the meetings was to inform the affected communities on possible environmental and social impacts and safety issues during the construction works. The planned civil works and their possible environmental impacts, mitigation measures and grievance redress mechanism were presented to the public. Complaints Register books were handed to selected responsible persons of the communities and special information posters about construction with contact information posted in every community. Telephone number, email address, and name of responsible persons for collecting concerns are posted on the posters. It was emphasized that impact shall be temporary.

3.8.2.1 Talin—Lanjik Road Section. During reporting period the pre-construction public awareness raising meeting organized by the Contractor in Lanjik community on 29 July 2016. Detailed data on the issues raised during the public meetings are presented in the Contractor's Monthly Social Report for August, 2016. Mrs. Arevik Sindoyan, the Contractor's manager of social impact, is responsible for collecting concerns about project activity. The pre-constructional public awareness raising meeting will be organized for operation of concrete batching plant in Maralik city in coming reporting period.

3.8.2.2 9 Overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak.

3.8.2.2.1 *Overpass on M2 km 13+029 in Ayntap and Masis city.* The public consultation was held in Masis community on 24 July 2016.

3.8.2.2.2 *Overpass on M2 km 21+800 in Araqsavan and Dimitrov communities.* The public consultation was held in Dimitrov community on 24 June 2016.

3.8.2.2.3 *Overpass on M2 km 10+943 in Ayntap.* The public consultation was held in Ayntap community on 26 August 2016.

3.8.2.2.4 *Overpass on M2 km 22+850 in Masis.* The public consultation was held in Masis community on 19 September 2016.

3.8.2.2.5 *Overpass on M2 km 25+630 in Azatavan.* The public consultation was held in Azatavan community on 7 September 2016.

3.8.2.2.6 *Overpass on M2 km 15+444 in Masis and Marmarashen.* The public consultation was held in Marmarashen community on 27 July 2016.

3.8.2.2.7 *Overpass on M2 km 24+147 in Burastan.* The public consultation was held in Burastan community on 28 July 2016.

3.8.2.2.8 *Overpass on M2 km 28+900 in Artashat.* The public consultation was held in Burastan community on 29 July 2016.

3.8.2.2.9 *Overpass on M1 km 21+550 in Ashtarak.* The public consultation was held in Ashtarak community on 1 November 2016.

3.8.3 No complains and/or suggestions on environmental issues related to construction activities are registered for Talin—Lanjik Road Section and 9 overpasses as of today.

### 3.9 Communication

3.9.1 Communication with the PIU, the Consultant and the Contractor's environmental team during the reporting period took place via official correspondence and emails, phone calls and personal contacts. Particularly the following issues are being raised and processed:

#### 3.9.1.1 Talin—Lanjik Road Section.

- ADB's mission visit;
- on the update of CEMP for Talin- Lanjik Road section;
- on instrumental measurements on dust, noise, water quality and vibration;
- on the SEMP's for topsoil stockpiling and disposal of excavated unsuitable material;
- on the repeated non- conformances detected during the monitoring and on correction action,
- on the environmental/ health & safety training for newly hired and all the staff of contractor and sub- contractors;
- on the non- permitted use of territories outside the RoW;
- on the missing information on sources of material for embankment;
- on the missing weekly monitoring and monthly reports;
- other routine issues.

#### 3.9.1.2 9 Overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak.

- ADB's mission visit;
- on preparation of the SEMP's;
- on identification and approval of the dump sites;
- on the findings of monitoring visits;
- other routine issues.

## Part III Environmental Monitoring

### 4. Monitoring

4.1.1 Talin-Lanjik road section. Regular monitoring has been performed during the reporting period according to the monitoring program developed based on the ADB safeguards and EMP requirements. The Monitoring program includes:

- a. Regular monitoring site visits on monthly basis to check compliance of construction activities to the EMP requirements, as well as monitoring of topsoil stockpiling and excavated material disposal;
- b. Unscheduled inspection visits when needed;
- c. Instrumented measurements and monitoring of environmental parameters of air quality, noise and vibration, water quality;
- d. Completion of the monitoring checklist and summary of compliances and non-compliances;
- e. Issue the non-compliance notices to the Contractor;
- f. Collection of monitoring data and providing to the PPMS
- g. Review of the Contractor's weekly monitoring reports.

4.1.2 Overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak. The Monitoring program includes:

- a. Regular monitoring site visits on monthly basis to check compliance of construction activities to the EMP requirements, as well as monitoring of excavated material disposal;
- b. Unscheduled inspection visits when needed;
- c. Completion of the monitoring checklist and summary of compliances and non-compliances;
- d. Issue the non-compliance notices to the Contractor;
- e. Collection of monitoring data and providing to the PPMS
- f. Review of the Contractor's weekly monitoring reports.

### 4.2 Monitoring of the Compliance with EMPs

4.2.1 Regular monitoring visits have been implemented and The detected non-conformances are:

#### 4.2.1.1 Tranche 3 Talin-Lanjik road section.

- contractor is operating topsoil, dump sites, as well as concrete plant without Engineer's approval;
- the height of stockpile exceeded 2.5m in Lanjik topsoil stockpile site;
- the concrete batching plant operation is environmentally inadequate;
- all the trucks were overloaded and not covered entering public roads;
- contractor is not implementing mud spread preventive measures and cleaning of public roads;
- the foremen were poorly aware on environmental safeguards;
- the garbage collection is not organised properly.

4.2.1.2 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak.

- the Contractor commenced Works without approved SEMP, the responsible persons from the Contractor on environmental, H&S and emergency management were not in the site during the monitoring, job-specific environmental and safety training for workers was not organized, proper bins for garbage collection were not placed, sufficient quantity of warning signs and exclusion barriers were not erected around work site areas, PPEs were not provided to and were not used by workers, sufficient sanitary-hygienic conditions for workers were not ensured, first aid kit and fire extinguisher were not available in mobile house; emergency contact list was not posted in a visible place at work site; the copy of ERP, accident registry form, register of complaints were not available in mobile house, and monthly progress reports had not provided in time; (Overpass on M2 km 10+943 in Ayntap);
- the Contractor commenced Works without approved SEMP; first aid kit and fire extinguisher were not available in mobile house; emergency contact list was not posted in a visible place at work site; Copy of ERP, accident registry form, register of complaints were not available in mobile house, mobile house was not installed in a safe place (Overpass on M2 km 13+029 in Ayntap and Masis city);
- the Contractor commenced Works without approved SEMP (Overpass on M2 km 21+800 in Araqsavan and Dimitrov communities);
- the Contractor commenced Works without approved SEMP and had not providing job-specific environmental and safety training for workers, proper storage of construction materials, emergency contact list, copy of ERP, accident registry form, register of complaints were not available in mobile house and has not provided monthly progress reports in time; (Overpass on M2 km 22+850 in Masis);
- the Contractor commenced Works without approved SEMP; not sufficient quantity of warning signs and exclusion barriers erected around work site areas, sufficient sanitary-hygienic conditions for workers, emergency contact list, accident registry form, register of complaints were not available in mobile house; boundaries of the construction site were not fenced; environmental and safety training for workers was not provided (Overpass on M2 km 24+147 in Burastan);
- the Contractor commenced Works without approved SEMP, job-specific environmental and safety training for workers was not organized, PPEs were not provided to and were not used by workers, first aid kit and fire extinguisher were not available in mobile

house, copy of ERP, accident registry form, register of complaints were not available in mobile house, proper bins for garbage collection were not placed, monthly progress reports has not provided in time; dump site was operated without submitting agreement with affected community to the Engineer (Overpass on M2 km 25+630 in Azatavan);

- PPEs were not provided to and were not used by workers, first aid kit and fire extinguisher were not available in mobile house; emergency contact list was not posted at work site; accident registry form and register of complaints were not available in mobile house; proper bins for garbage collection were not placed; the contractor comenced Works without approved SEMP; boundaries of the construction site were not fenced; public consultation was not organized prior Works commencement (Overpass on M2 km 28+900 in Artashat);
- the Contractor comenced Works without approved SEMP, not sufficient quantity of warning signs and exclusion barriers erected around work site areas, sufficient sanitary-hygienic conditions for workers were not ensured, first aid kit and fire extinguisher were not available in mobile house; emergency contact list was not posted in a visible place at work site; the copy of ERP, accident registry form, register of complaints were not available in mobile house, monthly progress reports has not provided in time; dump site was operated without Engineer's approval (Overpass on M1 km 21+550 in Ashtarak)

#### **4.3 Instrumented Measurements and Monitoring of Environmental Parameters of Dust Noise, Vibration and Water Quality in Talin-Lanjik road section**

4.3.1 The Contractor has entered into agreement with ATMS solutions LTD for baseline measurement data collection and further monitoring of dust, noise and vibration. The 6 measurement (sensitive) points were selected to identify baseline conditions for noise, vibration and dust. The instrumental measurements at all 6 points were conducted along M1 road Talin-Lanjik road section on 30 of November 2016. The measurement points are selected based on the construction works criteria during joint site visit with Engineers' and contractors' ESs. Detailed information on the results of baseline data is presented in the Noise, Dust and Vibration Assessment, Initial Baseline Conditions Report N01 available in the offices of the Client, Supervisor Consultant and Contractor. The results are presented in Annex C.

4.3.2 The baseline data for water quality will be collected in accordance with EMP, 21 days prior the commencement of works in relevant area.

Table1: Dust, noise and vibration measurement points

Site	Location	Coordinates	Points
1.	Km 87+300	40°29'59.02"N 43°52'3.21"E	Dust
			Noise
			Vibration
2.	Km 85+000	40°28'45.54"N	Dust

		43°51'58.56"E	Noise
3.	Km 81+400	40°27'20.19"N 43°50'54.95"E	Vibration
4.	Km 78+500	40°26'44.25"N 43°52'24.23"E	Dust
			Noise
			Vibration
5.	Km 77+500	40°26'13.12"N 43°52'19.84"E	Dust
			Noise
			Vibration
6.	Km 75+700	40°25'24.76"N 43°51'37.50"E	Dust

#### 4.3.3 Routine measurements and monitoring.

Measurements of the dust, noise and vibration monitoring parameters have not been carried out during the reporting period. It is planned to implement after winter when construction works will restart with full intensity.

#### 4.4 Non-compliance Notices

4.4.1 Taking into consideration that the Contractor is repeatedly violating the contract liabilities on the submission of the Contractor's environmental management plan for Tranche 3 Talin- Landjik Road section (km 71+500 to 90+200), on the submission of Initial Environmental Baseline report and the report on implementation of routine instrumental measurements on dust, noise, water quality and vibration and on the submission of weekly monitoring reports, a non-compliance notice was issued on 18 October 2016.

4.4.2 The Contractor implemented the following tasks for improving the situation related to non-compliance notice:

- the Contractor's environmental management plan for Tranche 3 Talin- Landjik Road section (km 71+500 to 90+200) was provided for Engineer's approval,
- Initial Environmental Baseline report and the Report on implementation of routine instrumental measurements on dust, noise, water quality and vibration were submitted and baseline data were collected,

4.4.3 However the missing weekly monitoring reports were not submitted;

4.4.4 During the reporting period no contamination on soil, water resources, flora and fauna has been observed during the implementation of construction works.



## Conclusions and Recommendations

4.4.5 As an environmentally active economic agent the Contractors provide regular environmental reports to MNP. Topsoil stockpiling operations are being implemented in accordance with applicable Armenian legislation and regulations; the thresholds for monitoring of environmental parameters of dust, water, noise and vibration are set in accordance with standards and norms set by Armenian legislation. The CEMP for Talin-Lanjik Road Section has been updated according to the Engineers and PMU's comments to meet ADB Safeguard requirements and conditionally approved by Engineer. A pre-construction public hearing has been implemented in a community impacted by the project. EMPs for reconstruction of 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak have been prepared by overpasses' contractors. (3.1.1-3.1.4, 3.3.1-3.3.3)

4.4.6 In order to ensure the environmental performance, it was requested that the implementation of construction activities meet EIA/EMP for Tranche 3 (Talin-Lanjik road section) and IEE/EMP for Tranche 1 (9 overpasses) requirements. The contractors are requested to prepare Site-specific Environmental Management Plans containing the identification of site-specific environmental impacts, risk assessment and mitigation measures in accordance with the Environmental Safeguards Information kit prepared by ADB Central & West Asia Department Safeguards Unit. ADB mission conducted loan reviews in North-South road corridor investment program. (3.2.1-3.2.3)

4.4.7 An environmental and archaeological evaluation visits to the sites for dumping and temporary stockpiling of stripped topsoil have been implemented. Site-specific environmental management plans for used topsoil stockpiling sites: Lanjik 1 (km 87+700) and Lanjik 4 (km 87+000) were prepared and included in the CEMP. stockpiling sites: Lanjik 1 (km 87+700) and Lanjik 4 (km 87+000) were prepared and included in the CEMP. They were approved together with the conditional approval of CEMP, and in case of the deadline for final CEMP will not be met the SEMP's will be approved by Engineer separately. The final SEMP for used dump site - Lanjik 2 (km 88+500) is still awaited. The final versions of SEMP's for Maralik concrete plant and camp area were not submitted by the Contractor for Engineer's approval and are still awaited. Contractor was requested by Engineer to establish separate concrete plant and camp area for Talin- Lanjik road section. The SEMP for construction camp has not been submitted by the Contractor for Engineer's approval. All four contractors reconstructing 9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak have prepared detail SEMP's for all overpasses that were approved. (3.4.1-3.4.8)

4.4.8 Environmental safeguard reviews were conducted within ADB audit missions. The Contractors are requested to implement the construction works in accordance with the recommendations of ADB missions. (3.5.1)

4.4.9 Regular awareness raising discussions and environmental compliance trainings on ADB safeguards and Armenian legislative requirements for environment and Health & Safety, measures planned in EMP and monitoring findings as well as archaeological chance find were conducted for Engineer's site inspectors, and the Contractor's and sub- contractor's workers, drivers, foremen and management staff. All workers of 4 contractors reconstructing 9 overpasses were briefed on general measures in case of Emergency situations, Occupational Health & Safety, Environmental issues by the contractors' environmental specialists. (3.6.1 – 3.6.2)

4.4.10 The Works were carried out under control of archaeology expert in the area of the protection zone of the Lanjik Archaeological Complex. The permission of MoC to start civil works in that area was obtained under condition that the section's civil works shall be implemented under control of archaeology expert. To understand the level of impact on the archaeological sites located along the alignment of the road, procurement of works for implementation of the corresponding field investigations have been initiated. No construction works have been implemented in next proximity to other archaeologically sensitive areas. (Talin—Lanjik Road Section) (3.7.1-3.7.3)

4.4.11 Grievance redress mechanism has been established and the pre-construction public awareness raising meeting was organized by the Contractor in Lanjik community (affected community in Talin—Lanjik Road Section and in all affected communities of reconstruction of 9 overpasses. No complains and/or suggestions on environmental related issues such as excessive dust, noise, improper waste dumping, etc. are registered by the end of reporting period (3.8.1-3.8.3).

4.4.12 Communication among environmental specialists of the PIU, the Consultant and the Contractors took place during the reporting period (3.9).

4.4.13 Monitoring activities implemented during the reporting period included monitoring site visits on monthly basis to check compliance of civil works to the EIA/EMP. Required correction actions have been implemented and all detected non-conformances have been neutralized. The 6 measurement (sensitive) points were selected to identify baseline conditions for noise, vibration and dust for Talin—Lanjik Road Section. The subcontracted ATMS solutions LTD was conducted the instrumental measurements at all 6 points on 30 of November 2016. Routine measurements of the dust, noise and vibration monitoring parameters have not been carried out during the reporting period. Monitoring data were recorded in the PPMS. The environmental non-compliance was issued during the reporting period. (4.1.1-4.4.4).

4.4.14 The non-conformances detected during the monitoring visits were reflected in the monitoring checklists. Some of them were improved immediately or during the time period set for improvement. Some non-conformances were improved partially. Those non-conformances which will not be improved during the time set for correction action will result in non-compliance notices to the Contractor. The non-conformances detected during the monitoring visits were presented in Annex B.

#### **Action plan for the reporting period from January to June 2017:**

<b>N</b>	<b>Action</b>	<b>Time frame</b>	<b>Responsible</b>
1.	Consultancy provided to Contractor's environmental team on ADB Safeguard Policy Statement	Every month during January-June 2017	Consultant
2.	Consultancy provided to Contractor's environmental team on the Armenian Environmental legislation requirements	Every month during January-June 2017	Consultant
3.	Evaluation site visits and assistance to the Contractor in the development of Site-specific Environmental Management Plans for topsoil stockpiling and excavated material dump sites and other routine working documents.	Upon Contractor's request	PIU/Consultant

4.	Preparation and approval of final CEMP, Site-specific Environmental Management Plans for topsoil stockpiling, excavated material dump sites, concrete plant and construction camp and sections of blasting operations	Upon the need	PIU/Consultant/ Contractor
5.	Review and approval of weekly and monthly reports, method statements and other documents submitted by Contractor	January-June 2017	PIU/Consultant/ Contractor
6.	Placement of signboards with project information and safety warning signs along the road sections, all disposal sites and topsoil stockpiles.	Upon new road section construction will be commenced, and new disposal site and topsoil stockpile will be established	Consultant/ Contractor
7.	Regular awareness orientation sessions for newly recruited staff	Upon the need	Consultant/ Contractor
8.	archaeological sites field investigations and Archaeological Work Plan preparation	February –April 2017	Consultant/ Contractor
9.	Review the outputs of the construction monitoring program with regard to measurement of dust, noise, water quality and vibration.	Every month during January-June 2017	Consultant
10.	Monitor the Contractor's construction works to ensure the compliance with EMP, CEMP and SEMP requirements	By the end of every month	PIU/Consultant
11.	Collect and provide the relevant information on environmental indicators to PPMS	By the end of March and end of June 2017	PIU/Consultant
12.	Preparation of chance find procedure (CFP) and training organization on CFP	February –April 2017	Consultant/ Contractor
13.	Implementation of chance find procedure in case of discovery an archaeological artifacts during construction	Upon the need	Consultant/ Contractor
14.	Review and addressing the GRM	End of every month	PIU/Consultant
15.	Other routine issues like unscheduled site visits, follow up of the detected defects, environmental assessment of re-designs, management of tree cutting, review and approval of Contractor's documents, etc.	Upon the need	PIU/Consultant
16.	Reporting on environmental safeguards	Monthly Bi-annual	PIU/Consultant/ Contractor

## ANNEX A: Status of environmental permits and licenses

Environmental Permits and Licenses	Status	Name/Place	Comment (Name of the authority, License number, Date)
<b>Tranche 3 Talin-Lanjik road section</b>			
Environmental expertise conclusion	Yes	RA MNP	Environmental Impact assessment and Expertise Centre SNCO/ 15 July 2016/ EE 61
borrow pits, quarries	No	-	Contractor was recommended either proceed with legal procedures to obtain permit for new borrow pit operation or contract a supplier.
Topsoil stockpiling site	Yes	Lanjik-1 TSS/Lanjik community/ Shirak marz Lanjik-4 TSS/ Lanjik community/ Shirak marz	Approval of Shirak Marzpetaran N02.1/7587-16/ 16 December 2016/ Contract on storage of topsoil with the Head of Lanjik community/ signed on 25.11.2016
Dumping site	Pending	Lanjik-2 DS/ Lanjik community/ Shirak marz	Contract on handing over the excavated subsoil to Lanjik community signed with the Head of community will be signed. (deadline is set on 30 Jan 2017)
Disposal of municipal and construction waste	Yes	Municipal landfill/ Maralik city	Contract N 9 on disposal of garbage at Maralik municipal landfill signed on 1 Aug 2016
Concrete Batching plant	Pending	-	Permits from MNP and other approvals shall be obtained after the location of the concrete batching plant is determined by the Contractor.
Cutting of grass, bushes and trees, located on construction site	No Shall be obtained when needed	-	According to CEMP due to re- design there are no trees hindering the construction process and there is no need in tree cutting (CEMP p 33)
<b>9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak</b>			
Disposal of municipal and construction waste Overpass on M2 km 10+943 in Ayntap.	Yes	Masis town municipal landfill (waste disposal facility)	Agreement between Masis city "Masis housing & utilities" OJSC and Montagetransshin CJSC on hand over the disposed construction waste dated 05 September 2016
Disposal of municipal and construction waste Overpass on M2 km 13+029 in Ayntap and Masis city.	Yes	Masis town municipal landfill (waste disposal facility)	Agreement between Masis city "Masis housing & utilities" OJSC and Araratchanshin LLC on hand over the disposed construction waste dated 01 July 2016

Dumping site Overpass on M2 km 15+444 in Masis and Marmarashen.	Yes	Burastan DS/ Burastan Community	Permit from Head Burastan community leader on hand over the excavated subsoil and disposed non-hazardous construction waste dated 01 June 2015
Disposal of municipal and construction waste Overpass on M2 km 21+800 in Araqsavan and Dimitrov communities	Yes	Dimitrov DS / Dimitrov community	Contract on handing over the demolished and excavated materials to Dimitrov community signed with the Head of community signed 27 of June 2016
Disposal of municipal and construction waste Overpass on M2 km 22+850 in Masis village.	Yes	Masis town municipal landfill (waste disposal facility)	Agreement between Masis city "Masis housing & utilities" OJSC and Montagetransshin CJSC on hand over the disposed construction waste dated 05 September 2016
Dumping site Overpass on M2 km 24+147 in Burastan.	Yes	Burastan DS/ Burastan Community	Permit from Head Burastan community leader on hand over the excavated subsoil and disposed non-hazardous construction waste dated 01 June 2015
Disposal of municipal and construction waste Overpass on M2 km 25+630 in Azatavan.	Yes	Masis town municipal landfill (waste disposal facility)	Agreement between Masis city "Masis housing & utilities" OJSC and Montagetransshin CJSC on hand over the disposed construction waste dated 05 September 2016
Disposal of municipal and construction waste Overpass on M2 km 28+900 in Artashat.	Yes	Artashat town municipal landfill (waste disposal facility)	Permit from Head Artashat community leader on hand over the excavated subsoil and disposed non-hazardous construction waste N 025/413 dated 27 July 2016
Disposal of municipal and construction waste Overpass on M1 km 21+550 in Ashtarak	Yes	Ashtarak town municipal landfill (waste disposal facility)	Agreement between "Eco Center" LLC and Montagetransshin CJSC on hand over the disposed construction waste dated 01 November 2016

## ANNEX B: Non-Conformances Detected During Monitoring Visits in Reporting Period

### Talin—Lanjik Road Section

	Reference	Requirement	Action to date	Action required/comment
1.	contractor is operating topsoil, dump sites, as well as concrete plant without Engineer's approval	SEMPs and sites operation shall be acceptable by Engineer	Not improved	Prepare and submit SEMPs. The Contractor shall follow the instruction otherwise non-compliance shall be issued
2.	the height of stockpile exceeded 2.5m in Lanjik-1 topsoil stockpile site	The height of topsoil stockpile should not exceed 2.5m	Not improved	The Contractor shall follow the instruction otherwise non-compliance shall be issued
3.	the concrete batching plant operation is environmentally inadequate	concrete batching plant should have proper drainage and the SEMP for concrete batching plant should be acceptable by Engineer	Not improved	Prepare and submit SEMP of the concrete batching plant and construct proper drainage
4.	all the trucks were overloaded and not covered entering public roads	trucks entering the public road loaded with earth or bulked material shall be covered	Not improved	The Contractor shall follow the instruction otherwise non-compliance shall be issued
5.	contractor is not implementing mud spread preventive measures and cleaning of public roads	Place gravel layer at every entrance to the existing HW from construction site	Not Improved	The Constructor shall follow the instruction and place the gravel layer at entrances otherwise non-compliance shall be issued
6.	the foremen were poorly aware on environmental safeguards	Organize trainings on environmental safeguards and ensure the continuance	Improved	No further actions are required
7.	the garbage collection is not organised properly	Ensure availability of bins or bags for garbage collection	Not Improved	The Constructor shall follow the instruction otherwise non-compliance shall be issued

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9 overpasses on M2 Yerevan-Artashat and on M1 Yerevan-Ashtarak

	Reference	Requirement	Action to date	Action required/comment
1.	Contractors comenced Works without approved SEMP	SEMP shall be acceptable by Engineer	Improved	No further actions are required
2.	first aid kit and fire extinguisher were not available	first aid kit and fire extinguisher should be available in the construction site	Improved	No further actions are required
3.	emergency contact list was not posted	emergency contact list should be posted on high visible place	Improved	No further actions are required
4.	Copy of ERP, accident registry form, register of complaints were not available	Copy of ERP, accident registry form, register of complaints shall be available for workers	Improved	No further actions are required
5.	mobile house was not installted in safe place	Place the mobile house in safe place taking into consideration all necessary safety measures for workers	Improved	No further actions are required
6.	monthly progress reports has not been provided in time	Ensure in time reporting	Improved	No further actions are required
7.	boundaries of the construction site were not fenced	boundaries of the construction site shall be fenced	Improved	No further actions are required
8.	environmental and safety training for workers was not provided	Organize trainings on environmental safeguards and ensure the continuance	Improved	No further actions are required
9.	proper bins for garbage	Ensure availability	Improved	No further actions are

	collection were not placed;	of proper bins for garbage collection		required
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## ANNEX C: Extracts from Noise, Dust and Vibration Assessment, Initial Baseline Conditions Report N01

### Measurement results

Measuring results for each measurement point are presented in testing protocols and summarized in Tables for noise, dust and vibration accordingly.

### Noise, vibration and dust assessment report № 06

Table 1: Results of noise measurements made at sensitive points on 30.11.2016 (baseline noise measurements)

Measurement time (from- till)	Sound Level (equivalent to sound level), LAeq, dBA	Maximum Sound Level, LAmax, dBA	Treshold limit value (equivalent to sound level), dBA	Threshold limit value (maximum sound level), dBA
№1 (Km 87+300)				
13:17-13:27	59.8	75.7	55	70
16:30-16:40	58.0	77.5		
№2 (Km 85+000)				
13:00-13:10	59.8	84.0	80 <sup>1</sup>	
17:00-17:10	61.9	84.7		
№4 (Km 78+500)				
12:45-12:55	56.0	70.0	55	70
17:36-17:46	59.2	71.7		
№5 (Km 77+500)				
12:33-12:43	66.5	79.9	55	70
17:50-18:00	57.0	74.8		

Table 2: Results of dust (PM2.5 and PM10) measurements made at sensitive points on 30.11.2016 (baseline dust measurements)

Measurement time (from- till)	Dust actual concentration, mg/m <sup>3</sup>	Maximum permissible concentration (MPC) for dust, mg/m <sup>3</sup>	
		Daily average	Maximum value
№1 (Km 87+300), PM2.5 <sup>2</sup>			

<sup>1</sup> as there are no settlements or other facilities located near the measurement point the 80 dBA TLV set for workplaces is applied

<sup>2</sup> 2.5um size particles



Between 13:17-13:22	0.005	0.035	0.16
Between 16:30-16:35	0.005		
Average value	0.005		
№1 (Km 87+300), PM10 <sup>3</sup>			
Between 13:17-13:22	0.012	0.06	0.3
Between 16:30-16:35	0.011		
Average value	0.012		
№2 (Km 85+000), PM2.5			
Between 13:00-13:05	0.008	0.035	0.16
Between 17:00-17:05	0.006		
Average value	0.007		
№2 (Km 85+000), PM10			
Between 13:00-13:05	0.015	0.06	0.3
Between 17:00-17:05	0.014		
Average value	0.015		
№4 (Km 78+500), PM2.5			
Between 12:45-12:50	0.014	0.035	0.16
Between 17:36-17:41	0.015		
Average value	0.015		
№4 (Km 78+500), PM10			
Between 12:45-12:50	0.03	0.06	0.3
Between 17:36-17:41	0.031		
Average value	0.031		
№5 (Km 77+500), PM2.5			
Between 12:33-12:38	0.009	0.035	0.16
Between 17:50-17:55	0.009		
Average value	0.009		
№5 (Km 77+500), PM10			
Between 12:33-12:38	0.018	0.06	0.3
Between 17:50-17:55	0.02		
Average value	0.019		
№6 (Km 75+700), PM2.5			
Between 12:25-12:30	0.011	0.035	0.16
Between 18:05-18:10	0.015		
Average value	0.011		
№6 (Km 75+700), PM10			
Between 12:25-12:30	0.024	0.06	0.3
Between 18:05-18:10	0.024		
Average value	0.024		

<sup>3</sup> 10um size particles

Table 3: Results of vibration measurements made at sensitive points on 30.11.2016 (baseline vibration measurements)

Measurement time (from- till)	Vibration actual exposure value, m/s <sup>2</sup>	Vibration exposure action value (EAV), m/s <sup>2</sup>	Vibration exposure limit value (ELV), m/s <sup>2</sup>
		Daily average	Maximum value
№1 (Km 87+300)			
13:22-13:27	0	0.5	1.15
16:35-16:40	0		
Average value	0		
№3 (Km 81+400)			
13:00-13:05	0	0.5	1.15
17:20-17:25	0		
Average value	0		
№4 (Km 78+500)			
12:50-12:55	0	0.5	1.15
17:41-17:46	0		
Average value	0		
№5 (Km 77+500)			
12:38-12:43	0	0.5	1.15
17:55-18:00	0		
Average value	0		

1) As a TLV for evaluation of noise actual levels at measurement points №2 (Talin-Lanjik section) 80 dBA should be applied, as this point is considered as workplace. 55 dBA as equivalent and 70 dBA as maximum noise levels (applied as TLVs for residential areas) are used for actual noise levels evaluation at points №1, №4 and №5 of Talin-Lanjik section (see Table 3).

2) As a result of noise baseline level measurements, conducted twice during the day (30.10.2016) at points №1, №4, and №5 of Talin-Lanjik section, the equivalent and maximum noise actual levels were above the TLVs (55 dBA as equivalent and 70 dBA as maximum) set for residential areas (beside the point №4 where the maximum noise level during the first measurement was equal to TLV).

3) Equivalent noise actual level at point №2 (Talin-Lanjik section) was within the 80 dBA TLV set for workplaces.

4) The main noise source in all measurement points is movement of cars and vehicles along the highway.

5) PM<sub>2.5</sub> and PM<sub>10</sub> (dust particles of 2.5µm and 10µm accordingly) actual concentrations in all dust measurement points (№1, №2, №4-№6 of Talin-Lanjik section) don't exceed the daily average and maximum permissible concentrations (MPC) for residential areas set by the RoA Government Decree №160-N "Norms of maximum permissible concentrations of atmospheric air pollutants in residential areas".

6) According to the results of vibration instrumental measurements, no vibration exposures were detected near the all vibration measurement points (№1, №3-№5 of Talin-Lanjik section).

**ANNEX D: The permission of MoC at Km 86+000 – Km 89+740 on Lanjik  
Archaeological Complex**



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N \_\_\_\_\_ " \_\_\_\_\_ 2016 թ.

« տրանսպորտի, կապի և տեղեկատվական  
տեխնոլոգիաների նախարար  
պրն Վ. ՄԱՐՏԻՐՈՍՅԱՆԻՆ

Հարգելի պարոն Մարտիրոսյան

Ի պատասխան Ձեր 2016 թ. հոկտեմբերի 5-ի N 01/27/13197-16 գրության՝ հայտնում  
ենք, որ Հյուսիս-հարավ ճանապարհային միջանցքի ներդրումային ծրագրի Տրանշ 3-ի  
շրջանակներում վերակառուցվող Թալին-Լանջիկ (կմ 71+500-կմ 90+200) և Լանջիկ-  
Գյումրի (կմ 90+200- կմ 117+670) ճանապարհահատվածների Լանջիկ համայնքի  
հատվածում ճանապարհաշինարարական աշխատանքներ իրականացնելու վերաբերյալ  
նախարարությունը տալիս է թույլտվություն:

Հարգանքով՝

Ա. ՄԱՐՏԻՐՈՍՅԱՆ

ՊՄՀՊ գործակալություն  
Կառ.՝ Ս. Շաքարյան  
Հեռ.՝ 010 565118

**Mr. V. Martirosyan,**

**RA Minister of Transport, Communication and Information Technologies**

**Dear Mr. Martirosyan**

**In response to your letter N 01/27/13197-16 dated October 5, 2016 we inform you that Ministry of Culture has given a permission to implement road construction works in section of Lanjik community in frame of reconstruction of the Talin-Lanjik (Km 71+500- Km90+200) and Lanjik-Gyumri (Km90+200 – Km117+670) Tranche 3 of North-South Road Corridor Investement Project.**

**Best regards,**

**A. AMIRYAN**